County Borough of Blackpool.

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1907,

BY

FRANCIS J. H. COUTTS,

M.D.; B.Sc.; D.P.H. (Vict.); F.C.S.,

Medical Officer of Health, and Medical
Superintendent to the Infectious Diseases Hospital.

Blackpool:
H. MAXWELL & CO., CHURCH STREET.
1908.

HEALTH COMMITTEE.

1907-1908.

Mr. Councillor Hampson, Chairman.

Mr. Councillor Hill, Vice-Chairman.

Mr. Alderman Battersby (Mayor).
,, ,, Heyes.

Mr. Alderman T. Bickerstaffe.
,, ,, Mather.

Mr. Alderman Ward.

Mr. Councillor Bamber.
,, ,, Bancroft.
,, ,, Bean.
,, ,, H. Brown.
,, ,, Cartledge.
,, ,, Chadwick.
,, ,, Charnley.
,, ,, Cocker.
,, ,, Critchley.

Mr. Councillor Dewhurst.
,, ,, Eaves.
,, ,, Ellis.
,, ,, Fielding.
,, ,, Gath.
,, ,, Hardman.
,, ,, Iredale.
,, ,, Prichard.
,, ,, Sharples.

Mr. Councillor Tillotson.

MEETINGS:—Usually the third Wednesday of the Month.

Health General Sub-Committee.

Mr. Councillor Hampson, Chairman.

Mr. Councillor Hill, Vice-Chairman.

Mr. Alderman Battersby (Mayor).

Mr. Alderman Heyes.
Mr. Councillor Cartledge.
,, ,, Chadwick.
,, ,, Charnley.

Mr. Councillor Cocker.
,, ,, Dewhurst.
,, ,, Hardman.
,, ,, Prichard.

To the Mayor Aldermen and Burgesses of the County Borough of Blackpool.

Mr. Mayor and Gentlemen,

In submitting my Seventh Annual Report, it is a source of keen satisfaction to me to be able to state that as regards the vital statistics for the year we have beaten all records. The gross death-rate, the nett death-rate, the zymotic rate, and the infant mortality rate are all lower than for any year on record.

There has been a persistent steady fall in the death-rate since 1899; it is certain that this cannot go on without a break, and that we are bound to have some fluctuations in the other direction, but the results of last year provide a fresh standard to work for in the future.

The figures as to Infant Mortality are specially pleasing, because they approach comparatively near the ideal rate of 100, which has so often been held up as what we should aim at. The special climatic conditions of 1907 are no doubt greatly responsible for the lowered Infantile death-rate, but I think the work of the Lady Health Visitor has also helped. It is gratifying to find that our figures are lower than the rates for England and Wales as a whole. Unfortunately this is only the second time in 20 years that we could claim this position.

I would earnestly commend to your serious consideration the remarks in Part I. of this Report in relation to phthisis and tubercular affections generally. It is a very grave matter that over one-tenth of our deaths in Blackpool should be due to what is really a preventible disease—tuberculosis. I desire also to direct your attention to the special section in Part II. on the Administrative Control of Measles and Whooping Cough. The value of notification in Measles is sometimes questioned, but I think a close examination of the statistics put forward will satisfy you that the pioneer action of Blackpool in this matter has been entirely justified by the successful results obtained.

Part III. of this Report is but an incomplete record, but serves to indicate in some measure the wide sphere of work coming within the purview of the Health Department. I trust that the summary account will prove not uninteresting, and will satisfy you that every effort is being made to attain and maintain a high standard of efficiency as regards sanitary administration. The year 1907 was remarkable for the exceptional number of measures passed into law which affect Public Health, and throw extra work on our Department. Some allusion to these Acts of Parliament is made at the end of Part III.

Part IV. deals with the work of the Meteorological Observatory, and the elaborate tables of observations therein contained clearly indicate how much time has to be devoted to this work. There can be no doubt, however, of the necessity at the present time for an important health resort to be properly equipped in this respect, and of the valuable advertisement resulting from the appearance in the press of the officially-verified figures as to sunshine and other climatic conditions.

As regards the future, I wish to repeat my remarks in last Report as to the necessity of further attention to the matter of sewer ventilation and flushing; and as to the provision of bath-houses and public wash-houses in certain districts. On this occasion, however, I desire more particularly to urge the great importance of endeavouring to do something to combat the great scourge of tuberculosis. It is extremely desirable that we should introduce at least the voluntary notification of phthisis in order to give us the opportunity of doing something to protect both residents and visitors in this health resort as far as we possibly can from the dangers of tubercular infection. I would respectfully beg you to consider this question most seriously.

Evidences of increasing confidence in and appreciation of the work and administration of the Department, on the part, both of the Council and of the public, have given me lively satisfaction, and have been a source of great encouragement. I acknowledge most gratefully the kindness and consideration I have received from members of the Council during the past year. I would also take this opportunity of expressing my thanks to my colleagues in the service of the Council for assistance at all times willingly given.

I must also record my hearty appreciation of the manner in which the staff of the Health Department have carried out their duties, and the zeal, loyalty, and assiduity which they have exhibited. I am particularly indebted to Inspector Sanderson, and to Mr. F. Berry, the Chief Clerk, for invaluable assistance.

I am, Mr. Mayor and Gentlemen,
Your obedient Servant,
FRANCIS J. H. COUTTS,
Medical Officer of Health.

Public Health Offices,
April, 1908.

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County Borough of Blackpool.

STATISTICAL SUMMARY, 1907.

Situation :—Latitude 53° 49′; Longitude 3° 3′ W.

Area of Borough (exclusive of foreshore)	3,495 acres
Area of foreshore	478 acres
Population (Census, April 1st, 1901)	47,348 persons
Persons per House as per Census	4.766

	1906	1907
Rateable Value (General District Rate)	£465,581	£479,037
Do. (Borough Rate)	£476,181	£489,743
Number of Dwelling Houses on Rate Book	12,244	12,487
Do. do. do. empty ...	191	153
Population of Residents estimated at middle of year from number of inhabited houses ..	57,115	58,431
Density of Population (persons per acre)	16.34	16.72
Number of Births	1,023	1,057
Birth Rate (per 1,000 inhabitants)	17.91	18.09
Number of Deaths	812	788
Death Rate (gross, per 1,000 inhabitants)	14.22	13.49
Number of Deaths of Visitors	109	111
Death Rate (corrected for Visitors)	12.31	11.59
Do. (corrected for age and sex distribution; factor for 1901 Census 1.093) ..	13.45	12.67
No. of Deaths from seven principal Zymotic Diseases	70	41
Zymotic Rate (per 1,000 inhabitants)	1.23	0.70
Do. (corrected for Visitors)	1.12	0.65
Number of Deaths of Children under 1 year of age (Infantile Mortality)	143	119
Infantile Mortality (per 1,000 Births)	139.78	112.58
Infantile Mortality (corrected for Visitors)	130.99	110.69

PRELIMINARY.

In accordance with the suggestion of the Local Government Board certain particulars as to general conditions, &c., are repeated yearly in the Annual Report of the Medical Officer of Health.

The Memorandum from the Board states :—

> " With regard to such points it should be remem-
> " bered that these reports are for the information of
> " the Board, and of the County Council, as well as of
> " the Council of the District, and that a statement of
> " the local circumstances and history of local sanitary
> " questions, which may seem superfluous for the latter
> " may often be needed by the former bodies."

A portion of this general information it is convenient to give in this place before the commencement of the Report proper.

AREA.

The Municipal Borough of Blackpool comprises the township of Layton-with-Warbreck, part of the township of Marton, and that part of the township of Bispham-with-Norbreck known as Bispham Hawes. The following is the area of the Wards exclusive of the foreshore :—Claremont 689 acres, Talbot 540 acres, Bank Hey 49 acres, Brunswick 520 acres, Foxhall 686 acres, and Waterloo 1,011 acres.

DENSITY OF POPULATION.

The mean density of population for the whole Borough is equal to 16·72 persons per acre :—In Claremont Ward it is 14·35, Talbot Ward 23·56, Bank Hey Ward 39·57, Brunswick Ward 18·06, Foxhall Ward 24·34, Waterloo Ward 7·71.

ELEVATION.

The mean elevation of the Borough is about 28½ feet above sea level, and varies between about 97 feet at Warbreck Hill, and about 9½ feet in the field north of Bloomfield Road (West).

Blackpool presents the curious condition that the main direction of the natural drainage is away from the sea. Commencing at the north end, there is a depression near the Gynn Inn, not extending far inland, and then the land rises to the top of Warbreck Hill, with a short slope towards the sea, and a longer slope inland. There is a long slope also in a southerly direction to about the Manchester Hotel, where the main sewer outfall is situated. South of this, to the boundary between Blackpool and St. Annes, the surface is very flat, and averages only about 20 feet above sea level. The main natural drainage of the northern part of the Borough is by means of a watercourse, known as the Layton Dyke (for part of its course the boundary between Blackpool and Hardhorn), into Marton Mere, and thence into the Wyre, and thus into the sea at Fleetwood.

GEOLOGY.

The town may be roughly divided into two portions; the first being that north of the Central Station, and having a subsoil of glacial boulder clays, the two beds being separated by sands and shingle, together at Norbreck reaching more than 100 feet in thickness, and resting on an ancient plane of marine denudation cut in the new red marls which, east of Fleetwood are salt bearing; the rock salt being thicker than any in Cheshire. The second, which lies south of the Central Station, consists of peat, lying on the glacial drift. This bed of peat is of varying thickness of 10, 20, or even 30 feet, being overlain with a greater or less thickness of blown sand. North of Blackpool it reappears at Rossall, and is associated with a submerged forest.

The boulder clay subsoil extends beneath Claremont, Talbot, Bank Hey, and a portion of Brunswick Ward, and also the easterly portion of Foxhall Ward. The portion of Brunswick Ward from the Central Station to Princess Street, and to a short distance east of the coast railway line, has a peaty subsoil, which, in this locality, comes nearly to the surface, and is of variable depth, rendering the ground very treacherous in places. The remainder of Foxhall and Waterloo Wards has a good depth of blown sand overlying the peat, except in isolated places. In parts of this portion of the Borough the sand is very fine, and in the ground it has almost the consistency of mortar.

SEWERAGE.

The District is drained as follows :—

(i) By the chief system of sewers which drains by gravitation the Borough except those portions mentioned below. This empties into a large sewer chamber, under Rigby Road and Tyldesley Road, which is egg-shaped, being thirteen feet in vertical diameter, and nine feet across at its widest part. The Lytham Road Sewer, which is a pipe one, enters this chamber from the south, and the Bonny Street culvert from the north, as well as the old culvert beneath the Promenade, whilst the inland main sewer empties into it from the east.

(ii) A small sewerage system which carries the sewerage from Little Layton by gravitation into a tank situated in a field east of the Cemetery, whence it is pumped daily into the terminus of the inland main sewer in Layton Lane, down which it flows by gravitation.

(iii) The drainage from the district east of the portion of Lytham Road south of the South Shore Station, and east of the railway line south of the Destructor, extending inland to Middle Lane and Central Drive, flows by gravitation to a tank at the Destructor, whence it is pumped into a new sewer chamber under the extension of Rigby Road, connected to the old one, whence sewage can flow by gravitation to the sea.

(iv.) The district east of Middle Lane and south of Waterloo Road is drained by gravitation to a pumping station at the corner of Waterloo Road and Bloomfield Road, whence it is pumped into the tank at the Destructor mentioned under (iii).

The sewage collected by all these systems discharges into the sea. An iron outfall of three feet diameter has been carried out to sea 800 yards, so as to deliver the sewage below extreme low-water mark. During 1907 this outfall has been lengthened by being carried seawards 150 yards. Valves fixed in a pen-stock chamber beneath the Promenade, serve to keep all sea water from the sewage chambers and sewers whilst the outfall is tide-locked. It was formerly arranged for discharge of sewage to take place only whilst the tide is receding, 1½ hours after high water until 2 hours before low-water, so as to insure all sewage being completely carried away. During September, 1904, this was altered so that sewage discharges from 1½ hours after high-water to the time of low water. Spen

Dyke, one of the principal watercourses of the district, originally emptied through an open watercourse into the sea near the Manchester Hotel. Later, the last few hundred yards were covered in, forming a culvert alongside the sewer chamber discharging at the foot of the hulking. In the last few years this culvert has been extended some distance inland, and recently the outflow of the culvert has been turned into the penstock chamber, into which the main sewer runs (the chamber being divided by a partition separating the Spen Dyke water from the sewage), and the Spen Dyke water now flows out by the old iron sewer outfall extended to the same point on the foreshore as the new sewer outfall.

During the re-construction of the penstock chamber necessitated by the widening of the Promenade, storm overflow pipes were provided to relieve the sewage chambers during heavy rains with an incoming tide, and also a pumping chamber, if required, for use when the sewerage system is full at high tide.

(v.) A smaller system takes the sewage from a portion of Claremont Park, and from an estate in Claremont Ward, which contains Cheltenham, Chesterfield, Clifford, Carshalton, and Handsworth Roads, etc., and also from a portion of the Gynn Estate, outside the Borough in the district of Bispham. This sewage flows by gravitation to an outfall at the Gynn, which extends seawards to a distance of 440 yards, sewage discharging at all states of the tide. A portion of this sewer has been defective for some time, owing to sinking in the peaty subsoil, and this portion is being relaid on piles driven through the peat into solid clay.

SEWER VENTILATION.

There is no complete system of sewer ventilation in the Borough. Formerly all sewers constructed had ventilating open gratings near the manhole covers at the street level. Many of these caused considerable nuisance and annoyance, and a large number have been closed, without other provision being made for efficient ventilation. In some of the newer streets there is no proper ventilation, and undoubtedly this leads, at times, to the intercepting traps being forced and sewer air escaping at unsuitable places. There are a few high ventilating shafts in certain parts of the Borough, and others have been proposed, and, I understand, some are to be erected in the near future. I think it is of great importance that such shafts should be provided at all the main dead-ends, and also at other points. Automatic flushing tanks at certain positions would also help materially in improving the condition of our sewers. In some cases there is so little fall that the solids are apt to remain a long time and become decomposed and foul-smelling. Systematic flushing during dry weather would materially improve their condition.

COLLECTION OF EXCRETA AND HOUSEHOLD REFUSE.

The water-carriage system of dealing with excreta is practically the only one in use in Blackpool. On the outskirts of the Borough there are a certain number of cesspools (about 22), but 13 of these are on farms and other premises, and are not emptied by the Corporation, the contents being utilised on the land by the occupiers. These are being gradually abolished with the extension of the sewerage system. Sixteen pail closets and 12 privies in connection with houses have been abolished during 1907, and now only about 15 houses with pail closets still exist, and 18 with privies. In addition there are 16 pail closets for the gipsy encampment at South Shore, and several more for other encampments in Talbot Ward.

In connection with the fair ground at South Shore, the occupiers of the land, at my suggestion, erected a wooden building for sanitary purposes to meet the requirements of stallholders and attendants on the various shows, as also for the use of visitors. This building contains a row of urinals, the urine being collected into galvanised pails, emptied every day, and also earth-closets for males and females, but instead of dry earth a mixture of sawdust and a disinfecting powder is employed, a charge being automatically ejected on to the excreta each time the closet is used. The whole arrangement has worked very satisfactorily and without any nuisance being occasioned, but owing to the development of this estate it has been decided by the proprietors to take a sewer through the land, to abolish the earth closets, and provide water closets.

As regards the collection of household refuse (ashes and dry refuse) open wooden tubs with handles are in use in a large number of cases. but these are being discouraged, galvanised iron ash-bins with covers being substituted when new receptacles are necessary. Ash-pits of the old deep form are being abolished under notice as occasion allows.

During 1907, systematic inspections of certain parts of the town have been carried out, and a considerable number of houses were found without proper ash receptacles. In compliance with notices served 223 houses have been supplied with galvanised iron ash-bins. The refuse is collected from the ash-receptacles weekly, but, during the season, in some portions of the town a daily collection is made; the refuse collected is entirely dealt with at the Destructor, 18,359 tons being destroyed during 1907.

WATER SUPPLY.

This is under the jurisdiction of the Fylde Water Board, a body composed of representatives from Blackpool, Lytham, St. Annes, and Fleetwood. The water is now laid on to every inhabited part of the Borough, and is an upland surface water derived from the Bleasdale and Grizedale Fells. The gathering ground is a good one, but the water derived from it is soft and of a peaty nature, and occasionally contains a certain amount of sediment, detracting from its appearance. This is particularly likely to occur in streets where the branch pipes supply come to a dead end, and sometimes complaints are received (from occupiers of houses in such streets) of the sediment in the water. The trouble could probably be entirely obviated by more frequent flushing of such branch supply pipes.

As is well known, soft upland surface water of this nature, especially if containing peaty matter, is liable to act on lead pipes and thus cause contamination of the water by lead, and this is apt to occur to a slight extent with the Fylde water. Some experiments on this matter are mentioned in another part of this report. There is absolutely no danger to health likely to arise from this cause, provided occupiers of houses would take the precaution of making sure that the first water drawn off in the morning is not used for drinking nor culinary purposes. It is only the water which has been standing all night in contact with the lead house service pipes which is likely to be contaminated.

During 1903, the Fylde Water Board commenced to make an immense new reservoir on their property, near the gathering grounds, which will largely increase the reserve stock of water available during any prolonged drought, and which should render the Fylde District secure from any chance of water famine for many years to come. This reservoir is estimated to cost £137,727, and to contain when completed 332 million gallons.

REPORT.

PART I.—VITAL STATISTICS.

POPULATION.

At the Census—April, 1901—the enumerated population of Blackpool was found to be 47,348 persons. At the middle of 1907 the Registrar-General calculated the population of the Borough as 62,420. According to the usual method of calculating populations at inter-censal periods by the assumption of an increase or decrease in the same ratio as during the decennium preceding the last census, the figure should have been 72,691, but as mentioned previously, the Registrar-General informed me, in response to my inquiry, that he had adopted a different method from the usual for the calculation of our population, as it was very unlikely that the extraordinary rate of increase shown during the last decennium would be maintained.

There is no doubt that the increase in population in Blackpool has proceeded in a very much smaller ratio during the last few years, and, as will be seen, my own estimate for the middle of 1907, is even lower than the lower figure given by the Registrar-General's methods.

I went very thoroughly into the methods of estimating populations early in 1904 owing to the importance of the question of Blackpool's true population in relation to the application to be constituted a County Borough. I then came to the conclusion that the method adopted by my predecessor, and continued by myself, of estimating the population by means of an enumeration of inhabited houses and the use of the census factor of persons per house gives the most accurate results, and provides a reliable estimate of the *average resident* population for the town.

When we consider the large number of domestic servants, shop attendants, and others engaged in the work of the town, who come here for the season only, and when we take into account the large influx of hawkers and street vendors, we should be justified in estimating our average *resident* population at a figure very much higher than the one thus obtained.

The estimated population for 1907 has been obtained by multiplying the number of inhabited houses (as found by the Overseers at the August-September enumeration for rate purposes) in each of the six wards of the town, by the Census factor showing the average number of persons per inhabited house in each ward at the date of the Census. These Ward populations added together give the total population of the Borough at the end of August. To bring this to the middle of the year, one quarter of the increase since the previous September is substracted. The figure thus obtained for the middle of 1907 was 58,431, and I am confident that this is not by any means too high for the average resident population of the town for the year.

The August-September figures are as follows :—

WARD.	Inhabited Houses.	Population	Empty Houses.
Claremont	2,068	9,886	14
Talbot	2,609	12,723	30
Bank Hey.........	411	1,939	1
Brunswick	1,974	9,391	33
Foxhall...........	3,610	16,694	42
Waterloo	1,662	7,798	33
Total.........	12,334	58,431	153

The number of inhabited houses in the whole Borough in August-September, 1907, was 12,334, as compared with 12,053 in August, 1906—an increase of 281 ; and the resident population was estimated at 58,431, as compared with 57,115—an increase of 1,316.

All the rates in this report are calculated, unless the contrary is expressly stated, on the estimated resident population of 58,431, which is probably a more correct estimate of the average resident population for the year than the figure given by the Registrar-General, viz. :—62,420. The increase over last year's estimated population is 1,316, made up of 380, the natural increase (excess of births over deaths), and 936, the excess of immigrants into, over emigrants from the Borough.

All the Wards have shown an increase in population during 1907, the greatest being 445 in Brunswick. Foxhall comes next with an increase of 394, then Claremont with 267, Waterloo with 104, Talbot with 56, and Bank Hey with 50.

In a place like Blackpool it is extremely difficult to present the vital statistics in a clear and simple manner, so many sets of figures requiring to be shown.

When we consider that on the average of a series of years more than one-seventh of all the deaths occurring here are deaths of visitors—merely temporarily resident in Blackpool—it is obvious that a true estimate of the health of the town cannot be obtained without making allowances for these. Accordingly I give the *gross* figures, including all deaths in Blackpool, and of Blackpool residents in Kirkham Workhouse and elsewhere, and also including the deaths of all visitors occurring in this town. I also show the *nett* deaths, with the deaths of all non-residents excluded. Statistics drawn up on this basis will be found in Tables I. and II. in the Appendix, and also in other places.

But for the purposes of the Local Government Board Tables (Tables XI. and XII. in the Appendix), I have to draw up statistics based on the instructions of the Board. According to these instructions, in calculating the nett rate, we can deduct only those deaths of non-residents which occur in *public institutions* in the district (*i.e.*, the Victoria Hospital, the Sanatorium, and the Co-operative Convalescent Home), and we cannot take into account any deaths of visitors occurring in hotels, boarding-houses, &c., even though they may have been suffering from their fatal illness for weeks before coming here.

Such a method is evidently quite unfair to health resorts, and especially to one like Blackpool, to which visitors come in enormous numbers. It practically means that the deaths of a population, at certain times probably exceeding 200,000, are credited to a population of 58,431. In 1907, we have estimated that 111 persons died whilst in Blackpool on temporary visits. Only 17 of these died in the Victoria Hospital, the Sanatorium, or the Co-operative Convalescent Home; in addition, five visitors were accidentally drowned in the sea and information as to their deaths sent to the Medical Officer of Health of the districts from which they came. These 22 are all that may be deducted from the total number of deaths in calculating the figures for the Local Government Board.

It is evident that quite an untrue idea of the healthiness of a district such as ours is given by the gross figures. But notwithstanding these drawbacks, the *gross* death-rate of Blackpool was only 13.49 per 1,000, which is the lowest on record. The Local Government Board Tables will be found in the Appendix (Tables XI., XII., XIII., XIV., and VII.), but, as above stated, I have also given in Tables I. and II. the Statistics calculated according to the old method.

BIRTHS.

During the year there were 1,050 births registered in the Borough, to which must be added as belonging to Blackpool, 7 births in the Kirkham Workhouse, giving a total of 1,057, as compared with 1,023 last year. Of the 1,057 births, there were 547 males and 510 females. The birth-rate was 18.09 per 1,000 living, as compared with 17.91 last year, 26.46 for the quinquennium 1896-1900, and 22.33 for the quinquennium 1901-1905. For England and Wales the rate during 1907 was 26.3 per 1,000—the lowest on record. For the 76 great towns the rate was 27 per 1,000, and for 142 smaller towns it was 25.7. The birth-rate is therefore 0.18 per 1,000 above the rate for 1906, 4.24 below the average for the five years 1901-1905, and 8.21 below the rate for England and Wales for 1907.

The declining birth-rate noted all over the country is very marked in Blackpool. For the five years 1896-1900 the average was 26·46. Since 1902 it has steadily fallen each year from 23.96 in 1902 to 17.91 in 1906, but this year the rate is higher by 0.18 per 1,000.

The order of the Wards as regards birth-rates is exactly the same as last year, viz. :—Talbot, Foxhall, Waterloo, Claremont, Brunswick, and Bank Hey, varying from 20.20 in Talbot and 20.19 in Foxhall, to 11.86 in Bank Hey. Talbot and Foxhall are the Wards which have probably the largest proportion of residential houses as apart from company-houses. They are also the Wards (see p. 29 of 1902 Report) which have the males and females between the ages of 20 and 45 more nearly equal, therefore probably contain the largest number of married couples at the reproductive period of life. Claremont and Bank Hey probably contain more *single* and *widowed* women engaged in the business of company-house keeping and otherwise looking after visitors. These considerations help to account for the variations in the birth-rates.

In Table III. (Appendix) will be found the full figures for comparison of all the Wards for the years 1906-1907, and the averages for the two quinquennia 1896-1900 and 1901-1905. It will be observed that Bank Hey, Brunswick, and Waterloo Wards show a higher birth-rate than in 1906. The number of births for each Ward during 1907 will be found in Table XII. (Appendix).

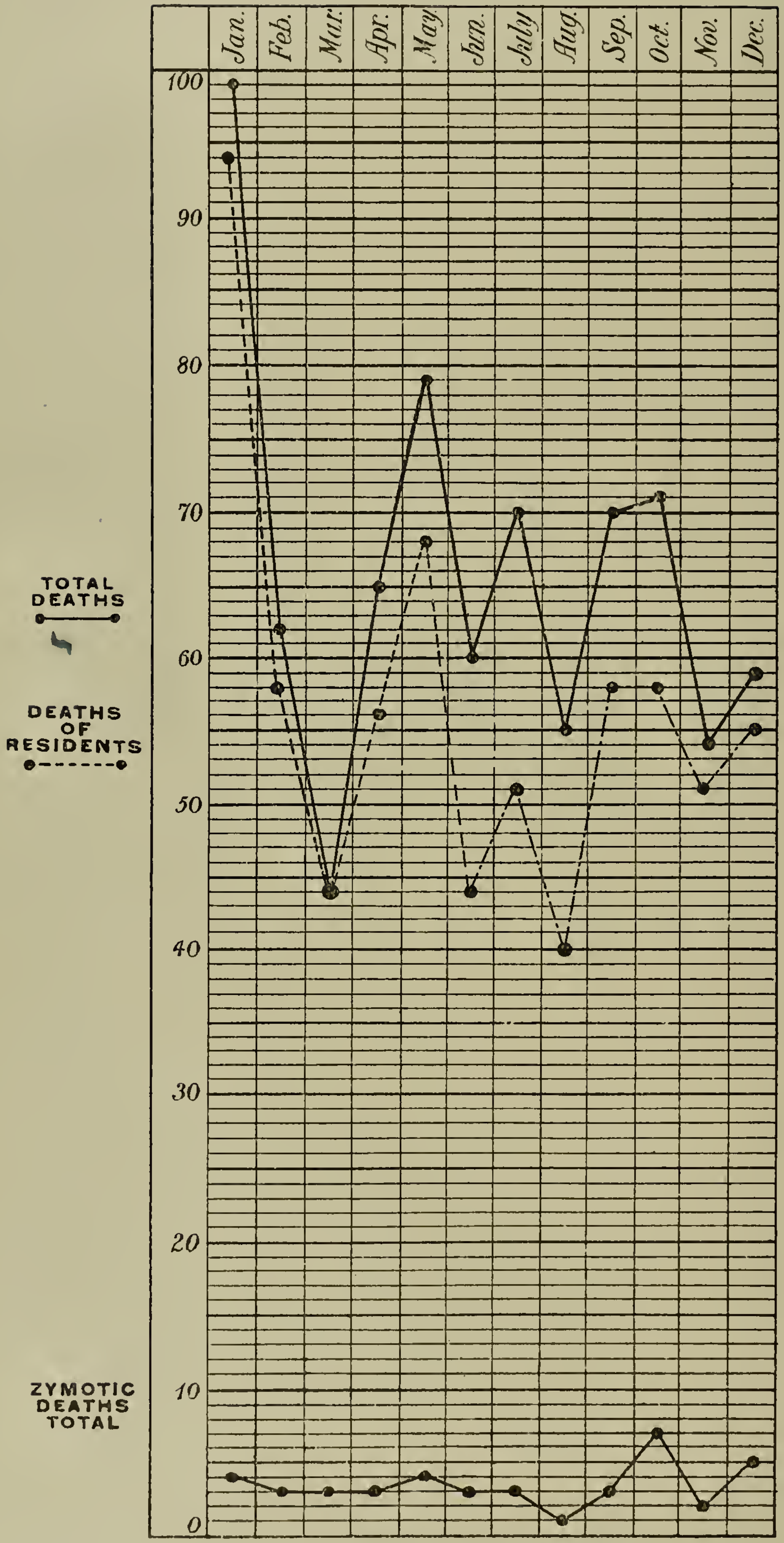
The births include 63 illegitimate children—34 boys and 29 girls. The percentage of illegitimate births of total births was 5·96, and the rate of illegitimate births was 1.08 per 1,000 inhabitants. This rate is lower than in any year since 1893. Amongst 1,000 females between the ages of 20 and 45 years*, there were 73.69 births, including 4.39 illegitimate births.

* *Calculated on there being* 14,344 *females at child-bearing age*—20 *to* 45.

DEATHS.

The number of deaths registered during the year was 788, and of these 111 were of persons staying temporarily in the town, and therefore classed as visitors, and not included in the estimated population of 58,431 persons. There were, therefore, 677 deaths of residents during the year—including 27 deaths in Kirkham Workhouse (which is out of the Borough), and 9 residents who died whilst away

CHART I. (Deaths, 1907).



from Blackpool, and whose deaths have been reported to me by the Medical Officer of the District in which they died. The *gross* death-rate was 13.49, and the rate for residents only—the *nett* rate—11.59 per 1,000. The deaths in Kirkham Workhouse are allocated (in calculating Tables II. and III.) to the Wards in which the patients last resided. The *nett* death-rate, corrected for age and sex distribution (according to the age and sex distribution at the 1901 census to render it comparable with the Registrar-General's rates for other districts) was 12.67. The death-rate for England and Wales during 1907 was 15.0 per 1,000, for the 76 great towns 15.4 per 1,000, and for the 142 smaller towns 14.5 per 1,000. The death-rate for Rural England and Wales was 14.7 per 1,000. The *gross* death-rate for Blackpool, therefore, even though including the deaths of all visitors for 1907, was lower than the average death-rate in the rural districts of England and Wales, also lower than the death-rate for the 142 smaller towns, and considerably lower than the average death-rate in the large towns. When the deaths of visitors are deducted the figures are still more favourable, testifying to the healthy condition of Blackpool during 1907, and bringing our corrected rate very near to 12 per 1,000, which I have previously suggested as a practicable figure to reach.

In Chart I. will be found a representation by a graphic method of the deaths for every month of the year amongst (1) the total population ; (2) residents only ; (3) the deaths from the 7 zymotic diseases (small-pox, diphtheria, scarlet fever, diarrhœa, whooping cough, measles, and " fever." It will be found that amongst residents the largest number of deaths occurred in January, and the smallest number in August. The highest number of deaths for any one month, including visitors, occurred in January. Zymotic deaths were considerably reduced, owing to the small amount of diarrhœa, the largest number being in October.

In considering the chart it must be remembered that they do not refer to "calendar" but to statistical months, and that whilst January, May, July, and October refer to five week periods the others refer only to four week periods.

DEATHS OF RESIDENTS.

The death-rates from all causes are highest in Brunswick Ward, 12.67, and lowest in Claremont, 10.14. The other Wards come as follows :—Waterloo, 12.44 ; Foxhall, 12.40 ; Bank Hey, 11.86 ; Talbot. 10.37. Applying the factors for correction shown on page 25 of the 1902 report the following order is obtained :—Brunswick, 14.52 ; Bank Hey, 13.73 ; Foxhall and Waterloo, 13.29 ; Claremont, 11.29 ; and Talbot 11.23. For zymotic diseases the death-rate was highest in Brunswick, and lowest in Bank Hey. (See Table III.)

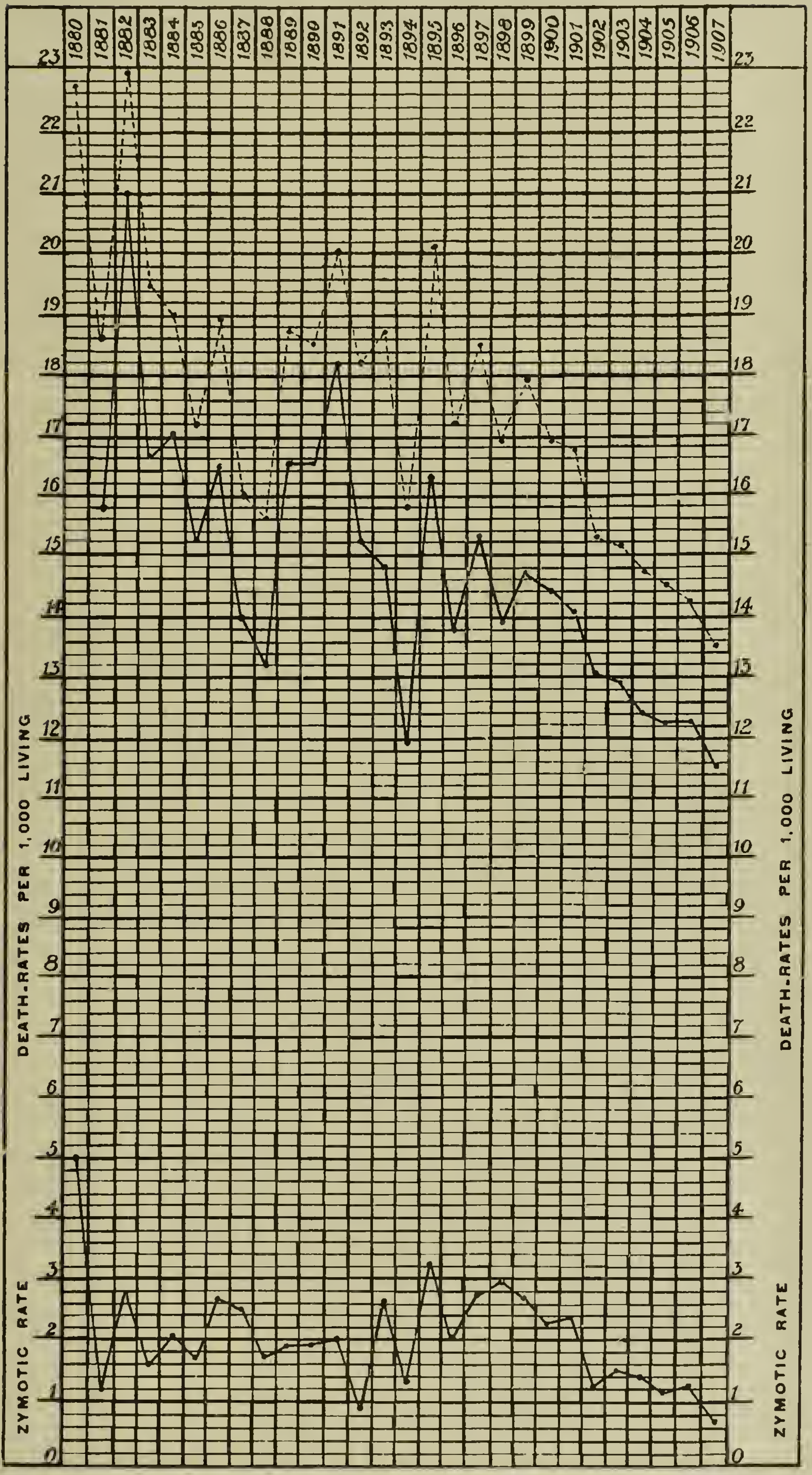
SEX.

In Table IV. (see next page) the deaths and death-rates of the two sexes are separated, and it will be noticed that under five years of age the male death-rates much exceed the female—32.43 to 21.54. Between 5 and 25 the female death-rate slightly exceeds the male. At every other age-period, however, the male death-rates in pro-

CHART II. DEATH RATES (1880–1907).

Gross Death-Rate - - - - - - - - - Nett Death-Rate ————

Total Death-Rate from Seven Zymotic Diseases ————



portion to the number of males at that age living, exceed the corresponding rates for females. Between 55 and 75, and 75 and upwards the discrepancy is particularly noticeable.

DEATHS AT VARIOUS AGES.

Of the 788 deaths, residents and visitors combined—

		Per Cent.
119	occurred in children under one year of age	15.10
52	between the ages of 1 and 5	6.60
405	between the ages of 5 and 65	51.40
212	in persons over 65	26.90
788		100.00

Table A (Appendix) shows the proportion of deaths under one, under 5 years of age and over 65, for each year, from 1886 to 1907.

It is worth noting that the proportion of deaths of persons over 65 is higher for 1907, than for any year on record, whilst the percentage of deaths of persons under five years of age is smaller than for any year on record. This of course, is an encouraging circumstance, and is accounted for by the lower infant mortality and the smaller zymotic rate, but also partly by the fact of the lower birth-rates recorded during the last few years altering the proportion of children under five to the whole population.

The deaths and death-rates per 1,000 living, at each age period, of residents only are shown in Table IV., from which it will be seen that 162 out of 677 occurred under the age of five years. Between 5 and 15 there was a total of 27 deaths, and only 26 at the ages 15 to 25. Between 25 and 65 the deaths numbered 274. There were 111 persons who died over 65 years of age and under 75; and 77 who exceeded the age of 75 years. That is, 27.77 per cent. of all the residents who died during 1907 exceeded the age of 65 years, as compared with 24.32 per cent. in 1906.

TABLE IV.

POPULATION AND DEATH-RATES (RESIDENTS), AT VARIOUS AGES.

	BLACKPOOL, 1907.									England and Wales 1891-01	England and Wales 1891-01
	Per cent. of population living at various ages (1901 census)		Number estimated living in 1907		Total Deaths		Death Rate		Death Rates of persons at different ages.	Death Rates of males living at different ages.	Death Rates of females living at different ages.
	Males	Females	Males	Females	Males	F'mls	Males	Females			
Under 5 years ...	5.01	5.32	2,929	3,110	95	67	32.43	21.54	26.83	62.11	52.33
5-15 " ...	8.22	9.04	4,803	5,284	10	17	2.08	3.22	2.68	3.32	3.42
15-25 " ...	8.01	10.96	4,678	6,401	7	19	1.50	2.97	2.35	4.35	3.95
25-35 " ...	8.20	10.60	4,793	6,194	16	12	3.34	1.94	2.55	6.60	5.93
35-45 " ...	6.14	7.80	3,588	4,560	30	32	8.36	7.02	7.61	11.24	9.38
45-55 " ...	4.37	5.80	2,552	3,390	45	48	17.63	14.16	15.65	18.53	14.44
55-65 " ...	2.88	3.99	1,685	2,329	47	44	27.89	18.89	22.67	34.24	27.79
65-75 " ...	1.08	1.74	629	1,014	51	60	81.08	59.17	67.56	69.06	59.35
75-85 " ...	0.31	0.47	180	276	32	33	177.78	119.56	142.54	143.32	128.11
85 and upwards	0.02	0.04	11	25	6	6	545.45	240.00	333.33	281.82	256.14

INFANT MORTALITY.

The figures for 1907 provide great encouragement to continue the efforts which have recently been made to endeavour to reduce the lamentably high rates of infant deaths.

It is a great pleasure to place on record the fact that the Infant Mortality rate was absolutely the lowest in the history of the Borough, and although the wet and cool summer had undoubtedly something to do with this low rate, I think we have reason to believe that a part of the reduction was due to the efforts which have been made and especially to the work done by the Female Health Visitor since her appointment.

We have had wet and cool summers in former years, but none associated with such a reduction in the Infantile Mortality as was the case last year.

There were 119 deaths of children under twelve months old, or 15.1 per cent. of the total deaths. As there were 1,057 births during the year, the Infant Mortality was 112.58 per 1,000 births, as compared with 139.78 in 1906, and as compared with an average rate of 146.37 for the quinquennium 1901-5. For residents only the rate was 110.69.

The Infant Mortality for England and Wales for 1907, was 118 per 1,000 births; for the 76 great towns it was 127, for the 142 smaller towns, 122; whilst the rest of England and Wales had a rate of 106.

As will be seen in the accompanying table, with the exception of 1902, this is the first time for 20 years that the Blackpool figures for Infantile Mortality have been below the average for England and Wales, and it is very satisfactory to find it so, especially as the general rate for England and Wales for 1907 is considerably the lowest on record.

INFANT MORTALITY, 1879–1907.
Rate per 1,000 Births.

Year.	Blackpool. Gross.	Blackpool. Nett residents only	England and Wales
1879	122	122	135
1880	206	206	153
1881	126	126	130
1882	221	221	141
1883	140	123	137
1884	146	140	147
1885	174	162	138
1886	152	150	149
1887	116	110	145
1888	137	137	136
1889	169	162	144
1890	182	177	151
1891	193	182	149
1892	160	143	148
1893	210	193	159
1894	160	132	137
1895	206	192	161
1896	159	146	148
1897	191	169	156
1898	178	163	160
1899	184	173	163
1900	161	149	154
1901	168	156	151
1902	123	118	133
1903	135	130	132
1904	170	161	145
1905	135	127	128
1906	140	131	133
Mean of 28 years	163	154	145
1907	113	111	118

Much, however, remains to be done to reach the ideal we should aim at, as with the favourable climatic conditions in 1907, I consider our Infantile death-rate should have fallen considerably below 100.

I am hoping much from the work now being carried on by the Health Visitor, which should tell more definitely in 1908 than in 1907; during last year it was only for six months that her services were available.

It was a sincere satisfaction to me when the Health Committee resolved to appoint a Female Health Visitor.

Many applications were received, and the choice of the Committee fell on Miss Annie Heaton, whose training and experience promised to ensure her being a very useful officer of the Corporation. Miss Heaton entered on her duties in July, and it is satisfactory to note that from the first, little or no objection has been made to her visits. Instead of resenting the visits as an intrusion most mothers welcomed the Health Visitor, and seemed grateful for her advice and assistance. In several instances both father and mother joined in begging her to re-visit the home.

During the period after her appointment up to the end of December Miss Heaton paid 1,303 visits in all, but some of these were in connection with enquiries into deaths, Factory and Workshop inspection, inspections under the Shop Hours' Act, and enquiries into whooping cough, &c. But in connection with births she paid 608 visits, 470 being first visits, and 138 re-visits. In each case, on the first visit, she left copies of the forms which were prepared and issued in 1906, and printed in my Report for that year. She also left a copy of a little book on "How to manage a Baby." She found that these instructions were most gratefully received, and in many instances carefully followed. In one case, the mother being dead, a woman of 76 was strictly carrying out the directions given in preparing food for the baby which had been put into her charge.

It is to be hoped that the distribution of this literature on infant feeding will have good results in helping to counteract the ignorance which often exists, and the erroneous ideas which are frequently put forward by people who ought to know better. It is much to be regretted that mothers were found to have ceased breast feeding without any necessity, from advice given sometimes by midwives, sometimes by irresponsible people, various kinds of patent foods being recommended.

It was amazing to find what trivial reasons were sometimes put forward for advising the mother to cease suckling the child. It is regrettable that some monthly nurses and midwives seem very ready to assume that the mother's milk is not sufficient, or not strong enough, for the baby, and thereupon advise so and so's patent food, a sample of which has perhaps just been sent to the midwife by an advertising firm.

One woman distinctly attributed the death of her child to the wrong advice thus given her to take the child off the breast and to put it on the bottle. On the other hand one sensible mother took her child out with her to work, in order to keep it on the breast, and daily took herself an extra supply of milk. She said it was "cheaper policy than buying milk and feeding bottles for the child."

Out of the 470 cases visited 280 were found to be breast-fed ; 85 were fed on the bottle ; 28 partly on the breast and partly by bottle ; 7 partly by breast and partly by spoon ; while 62 had infants' foods as well.

Of the bottles used, 23 were boat shaped, with short teats, and 62 were of the old objectionable type, with long feeding-tube, which it is impossible to keep properly clean.

In 16 cases bread and milk was given to young infants—a most unsuitable food—and in one case the death was probably attributed indirectly to this feeding. In another house a child was given the breast and the bottle, scalded arrowroot, biscuits, a plate of potatoes, and bread and butter.

The sad problem of the unwanted illegitimate child was only too frequently encountered. Occasionally Miss Heaton came across a case in which the mother was bravely making the best of things, and endeavouring to feed and look after her child, but in most cases the child was nursed out. In one such instance death was really due to neglect, and a death enquiry in another such case revealed the startling fact that the child had been in nine different homes during the ten months of its existence. Another, three months old, had been in 3 different homes.

I am glad to see that strong representations are being made to the Government to amend the Infant Life Protection Act by applying the provisions as to registration and inspection to cases where only one child at a time is kept. The information which has come before me has convinced me that it is quite as important that supervision should be exercised over persons who take one child only as over those who take more than one, and it is especially important in those cases where the child is taken in consideration of a lump sum paid down.

Another conclusion impresses itself more and more upon my mind on consideration of this difficult question of dealing with illegitimate children, and that is that Foundling Hospitals or some kind of state provision for all such children, who cannot be properly looked after, must be established, if these unfortunate creatures are to have anything like a fair chance in life. The public sentiment which, however deservedly, severely reprobates the mother for her moral lapse, is apt to forget that in punishing the mother, the innocent child also suffers. Comparatively rarely is the putative father compelled to contribute to the maintenance of the child, the cost of which, therefore, falls on the mother, who finds herself too often shut out from honest employment, owing to the force of public opinion. What wonder then that in many cases there is a strong desire to get rid of the child, which proclaims the mother's shame, and is actually an obstacle to her getting work to support herself and her baby: thus the child is put into the hands of strangers.

In her rounds Miss Heaton was constantly coming across cases which showed how insistent is the need in Blackpool for District Nurses, and very often her assistance was urgently asked for duties which were really entirely outside her sphere as Health Visitor. In some instances the claims of humanity compelled her to give what help she could, but it was evident that if such work was to be done it would interfere very materially with her proper duties. It is to be hoped that the public of Blackpool will generously support any scheme which may be brought forward to supply this great need for District Nurses.

I have gratefully and warmly to acknowledge the kind assistance received from the Committee, and from the individual members of the Ladies' Sick Poor Association. In many instances Miss Heaton found that the only chance of keeping the child alive lay in the provision of food, or other necessaries, for the mother or the child. The Ladies' Sick Poor Association most generously came to the rescue whenever Miss Heaton pointed out deserving cases, and I am certain that in not a few instances lives were saved by the aid thus given. They also helped by giving the addresses of suitable cases in which the Health Visitor might give good advice.

As in my last two Reports, I give a table analysing the cases of Infantile deaths from the point of view of causation. (See also Table VII., Appendix).

The first point that leaps to the eyes is that 60 out of the 119 died before the end of the third month of life—more than half—showing the absolute necessity of early notification of births if we are to have any opportunity at all of giving advice and help. The Notification of Births Act, of 1907, which came into force, and was adopted in Blackpool early in 1908, will get over that difficulty, and I trust that Medical Men and Midwives will sink any personal objections they may have to the Act and assist by giving us early information. In this way lives may be saved owing to the fact of birth coming to our knowledge within the first three days of life.

DEATHS UNDER ONE.—TOTAL.
(Calendar Quarters.)

CAUSES.	YEAR.		QUARTERS.								FEEDING.			Mother employed away from home.	Illegitimate.
			First		Second		Third		Fourth						
	Under Three Months.	Total.	Under 3 Months.	Total	Under 3 Months.	Total	Under 3 Months.	Total	Under 3 Months.	Total	Not Fed.	Breast	Hand Fed partly or entirely.		
1.—Common Infectious Diseases (Measles, Diphtheria, and Whooping Cough)...	0	5	0	1	0	2	0	1	0	1	0	3	2	0	0
2.—Diarrhœal Diseases:—Diarrhœa, Enteritis and Gastritis	4	9	1	1	1	2	0	1	2	5	0	2	7	1	2
3.—Wasting Diseases:—Premature Birth, Congenital Defects, &c.	21	23	7	7	6	6	5	5	3	5	4	4	15	4	4
Debility	8	11	2	3	4	4	1	3	1	1	2	1	8	2	3
4.—Tubercular Diseases	2	8	0	1	0	4	2	3	0	0	0	2	6	0	1
5.—Other Causes { Convulsions	7	9	3	3	1	3	1	1	2	2	1	1	7	1	1
Bronchitis.....................	3	7	1	1	1	3	1	2	0	1	0	2	5	0	1
Pneumonia	3	23	0	3	1	4	0	5	2	11	0	7	16	2	4
Other causes	12	24	2	8	6	9	2	2	2	5	1	6	17	1	1
TOTALS	60	119	16	28	20	37	12	23	12	31	8	28	83	11	17

One would be inclined to think that the twenty-three deaths from premature birth and congenital defects, and eleven from debility represent causes which we cannot very well control, and this is, to some extent, true, but greater knowledge on the part of prospective mothers, and greater care might easily lead to a decrease in these causes. It is noticeable that there is a reduction of 15 from the previous year.

Diarrhœal diseases played a comparatively insignificant rôle in the causation of child deaths during 1907. I hope this improvement may continue, but it is important to recognise that a hot summer, an excessive number of house flies conveying filth from manure pits, and other places, on to food, is only too likely to lead to an increase in such diseases.

Pneumonia and bronchitis combined led to 30 infant deaths, and suggest some carelessness in the exposure of babies to the weather.

The figures as to feeding are as usual instructive, no fewer than 83 being hand-fed, either partially or entirely.

In only 11 cases was it admitted that the mother was employed away from home. No fewer than 17 out of the 119 deaths were of illegitimate children. The deaths of illegitimate children under one year of age, in relation to the total illegitimate births, works out at the rate of 26.98 %, whilst among legitimate children the rate is only 10.26 %.

The question of insurance is sometimes raised in connection with infantile deaths, so the following figures may be of interest. Of the 119 children under one year of age, who died in Blackpool during 1907, 61 were not insured; we had no definite information in 16 cases, leaving 42 who were insured. Of these 7 were not in benefit. Of the others only one was insured for over £4, 5 were insured for amounts between £3 and £4, six between £2 and £3, 14 between £1 and £2, 4 under £1, and in 5 cases the amount insured for was not given.

Our information, therefore, gives no support whatever to the idea that child insurance has any bearing, at any rate in Blackpool, on infantile mortality. The amounts above-mentioned would in most cases not even pay the funeral expenses.

EMPLOYMENT OF WOMEN AND INFANT MORTALITY.

In connection with the question of the relation of the employment of mothers to infantile mortality, the Home Office has requested the assistance of Medical Officers of Health in an important investigation having for its object to define precisely, if possible, how far the industrial employment of women tends to increase infantile mortality. In Blackpool, there is little scope for employment of women outside domestic work, so that the factor is not of great importance here, but I considered it my duty to promise my assistance in the investigation, as it is obviously of some interest to compare towns where there are few factories with others where such employment is common.

In order to commence the investigation on a thoroughly satisfactory basis the Home Office called a Conference of those interested, and this was held in London on November 6th, 1907. By the goodwill of the Health Committee I was enabled to be present on that occasion, and presented a report on the Conference, which was published in the Council Minutes for 1907, page 702.

The Conference laid down the lines on which it was considered advisable that investigation should take place. It was obviously essential that all workers should adopt, as far as possible, similar methods.

As a result of the suggestions then and afterwards made, the Home Office, along with a small Committee of Medical Officers of Health, drew up a scheme for the use of those taking part in the investigation.

It was decided that areas as far as possible homogeneous in the character of their population should be taken. In those selected areas visits should be paid in connection with every child born between January 1st and December 31st, 1908. Three visits to be paid in each case, the first soon after birth, the second about six months later, and the third after the lapse of twelve months. This, of course, implies that the investigation results cannot be tabulated until early in 1910. A scheme of enquiries was drawn up by the Home Office. The enquiries are such as to give information about the age, nationality, and previous health of the mother, history as to previous confinements or miscarriages, as to occupation before marriage and before and after labour. Other enquiries concern the age, nationality, and health of the father and the condition of the home. As to the child, enquiries show its condition on each occasion, and the methods of feeding employed during the first six months of life. All particulars obtained by different investigators are to be entered on the approved forms.

STATISTICS OF INFANTILE MORTALITY.

In TABLES V. and VI., the deaths and death-rates of children under 12 months old, for the years 1901 to 1907, and the quinquennia, 1891-95, 1896-1900, and 1901-1905, are given distributed into Wards, the largest number of deaths occurring in Foxhall and Talbot Wards.

Number of Children (residents only) under one year old who died in the respective Wards.

TABLE V.

WARD.	1891–5	1896-1900	1901-1905	1901	1902	1903	1904	1905	1906	1907
Claremont...............	78	98	125	23	22	26	26	28	20	17
Talbot	179	271	243	51	47	53	56	36	39	21
Bank Hey	15	23	16	5	1	3	6	1	2	8
Brunswick	91	148	83	21	12	11	22	17	22	18
Foxhall	159	289	268	57	53	50	54	54	40	38
Waterloo................	60	107	84	24	13	15	24	8	11	15
Total for Borough .	582	936	819	181	148	158	188	144	134	117

Of the 119 deaths of children under one year of age, 2 were of children not born in Blackpool (nor of Blackpool parents in Kirkham workhouse). Leaving these out of consideration, the corrected Infant Mortality rate for 1907 is 110.69, as compared with the corresponding rates for 1906 of 130.99, and 138.4 for the five years 1901-1905.

Table VI. gives rates for infant mortality (residents only) for several years, and also the infant mortality for the separate Wards, from which it will be seen that the Infant Mortality for 1907 was highest in Bank Hey and lowest in Talbot.

In Table C (Appendix) the quarterly rates are given for 1907 (for residents only) from which it will be seen that the rate was highest in the second quarter—131.39, and only 84.29 in the third quarter, which is usually the highest, 127.66 in the fourth, and 101.05 in the first quarter.

TABLE VI.

Infant Mortality ; Deaths of Children (residents only) under one year old per 1,000 births :—

WARD.	1891-5	1896-1900	1901-1905	1901	1902	1903	1904	1905	1906	1907
Claremont ..	172.5	117.2	142.1	129.9	110.6	152.0	145.3	172.84	139.86	103.03
Talbot	162.8	162.6	151.8	174.1	146.9	154.1	172.3	111.80	150.00	81.71
Bank Hey...	112.0	157.5	133.6	217.4	40.0	136.4	230.8	43.48	111.11	347.83
Brunswick ..	168.2	188.3	119.4	128.0	81.6	75.3	163.0	149.12	165.41	139.53
Foxhall	187.2	172.7	143.5	157.0	137.0	126.3	152.1	145.16	119.76	112.76
Waterloo ...	163.9	151.3	114.1	169.0	75.6	107.9	160.0	57.97	81.48	102.74
Total for Borough ...	168.3	160.2	138.4	155.8	118.4	129.72	160.68	127.32	130.99	110.69

The causes of deaths under twelve months are classified in Table VII. (Appendix), under several headings, and also according to age at death. As will be seen, the chief causes were Premature Birth, 19; Debility, 11; Pneumonia, 23; Convulsions, 9; Bronchitis, 7; Diarrhœa and Tuberculous Meningitis, each 5.

Only one of these infantile deaths was uncertified, the cause of death being stated to be: Natural Causes (Bronchitis).

During the year there were 994 legitimate, and 63 illegitimate births. Of the 7 children born of Blackpool parents in Kirkham Workhouse, 6 were illegitimate. Among residents only, during the first year of life there were 102 deaths of legitimate, and 17 deaths of illegitimate children. The proportion of deaths under 12 months was thus 102.62 per 1,000 legitimate births, and 269.8 per 1,000 illegitimate births, the mortality being considerably more than twice as large in illegitimate as it was in the case of legitimate children.

DEATHS OF VISITORS.

In health resorts, where the resident population is reinforced at certain periods of the year by an influx of visitors greatly outnumbering the resident population, it is necessary, in order to get fair figures, to deduct the deaths of those who are staying temporarily in the town. In Blackpool, special enquiries are made in the case of each death, into the length of time the person was resident in the town, and the purpose (health, pleasure, or business) for which they came here. As a result of these enquiries, it is decided whether the deceased was a visitor or not. Even if the deceased has only been here a short time, if he has come with the intention of taking up residence permanently in the town, or if he has come for work, and not for health or pleasure, he is classed as a resident. In 1907 it was decided to exclude 111 deaths as those of visitors, viz., 62 males, and 49 females. Nine were under five years of age, and 102 above. There were 3 deaths from the seven principal zymotic diseases, in some of which cases either infection or invasion of the disease had taken place before their arrival in the town. Valvular and other Heart Diseases accounted for 17 cases, Bronchitis, Pneumonia, and Pleurisy, 15 cases, Phthisis 11 cases, Apoplexy, 8 cases, Natural Causes, 6 cases, Glycosuria, &c., 7 cases, Cancer, 5 cases, Old Age, 1 case, Accident, 10 cases.

It will be observed again how high is the proportion of Phthisis deaths, and also the deaths from diseases of the heart.

LENGTH OF RESIDENCE IN BLACKPOOL OF PERSONS WHO DIED HERE DURING 1907.

In Table VIII. (in the Appendix) is shewn the length of time persons dying in 1907 had lived in Blackpool, classified in six age groups.

It will be observed that 83 persons who died during 1907 had been residents of Blackpool for over 25 years; and to these should be added 22 deaths of persons over 25 born in Blackpool, making a total of 105. There were 96 with a residence over 15 and under 25 years, and 190 over 5 but under 15 years. Of the 788 deaths, 135 were of persons (not born here) resident in Blackpool less than 12 months; these include the 111 deaths of visitors; 83 of these had been in Blackpool less than one month.

CAUSES OF DEATH.

In Table IX. will be found a full classification of the causes of death :—Part I., a summary ; Part II., deaths of residents classified under diseases, six age groups, and wards ; Part III., deaths of visitors, similarly classified.

The total deaths may be summarised as follows :—

Specific Febrile or Zymotic Diseases ...		140 deaths, or 17.77 per cent.
Parasitic		2 deaths, or 0.25 per cent.
Dietetic		5 deaths, or 0.63 per cent.
Constitutional .	,,	88 deaths, or 11.17 per cent.
Developmental .	,,	58 deaths, or 7.36 per cent.
Local	,,	432 deaths, or 54.82 per cent.
Other	,,	27 deaths, or 3.43 per cent.
Deaths from violence		36 deaths, or 4.57 per cent.

PRINCIPAL ZYMOTIC DISEASES.

Of the principal Zymotic diseases Scarlet Fever and Enteric Fever show a slight increase, Diphtheria and Measles a decrease from the 1906 figures ; particulars respecting them will be found set out at length in Part II. of this Report. The deaths from the principal Zymotic diseases (Small-pox, Scarlet Fever, Diphtheria, " Fever," Measles, Whooping Cough, and Diarrhœa), numbered 41 in all, giving a Zymotic death-rate of 0.70 per 1,000 living ; but of these 41 deaths 2 were visitors, and with these deducted the Zymotic-rate for the resident population was 0.65 against 1.12 the previous year, and as compared with 1.26 in England and Wales, 1.54 in the 76 great towns, 1.29 in 142 smaller towns, and 0.91 in Rural England and Wales.

It is certainly satisfactory to find that notwithstanding our great liability to the importation of infectious diseases, our Zymotic rate should be lower even than that in the rural districts of England and Wales.

The deaths from the various diseases were as follows :—

Small-pox	—
Measles	1
Scarlet Fever	4
Diphtheria and Membranous Croup	10
Whooping Cough	7
Fever (Typhus and Typhoid)	10
Diarrhœa	9

The rates for residents only varied in the different Wards, from 0.85 in Brunswick Ward, to *nil* in Bank Hey (See Table III. in Appendix).

For the total number of cases of each disease in the various Wards, see Tables IX. and XIII.

Although the zymotic rate is so low it is disquieting to have so many as 10 deaths each from Diphtheria and Typhoid Fever.

Particulars as to Scarlet Fever, Diphtheria, Enteric Fever, Puerperal Fever, Erysipelas, and Measles, will be found in Part II. of this Report.

WHOOPING COUGH.

This disease caused 7 deaths in Blackpool during 1907.

The mortality rate for 1907 came to 0.12 per 1,000 of the population, only one-half of the rate for the country generally.

I entered at some length into the question of Whooping Cough in my Report for 1903. As I stated then, the Sanitary Committee did not see their way to advising the Council to have compulsory notification of Whooping Cough as at Plymouth and Southport, but decided to attempt to get voluntary notification through schools and boarding-houses. During 1907, 186 cases have come to the knowledge of the Health Department, three or four schools being affected, especially in May and June. Visits have been paid, and disinfection by formaldehyde or sulphur fumigation carried out at the end of the case.

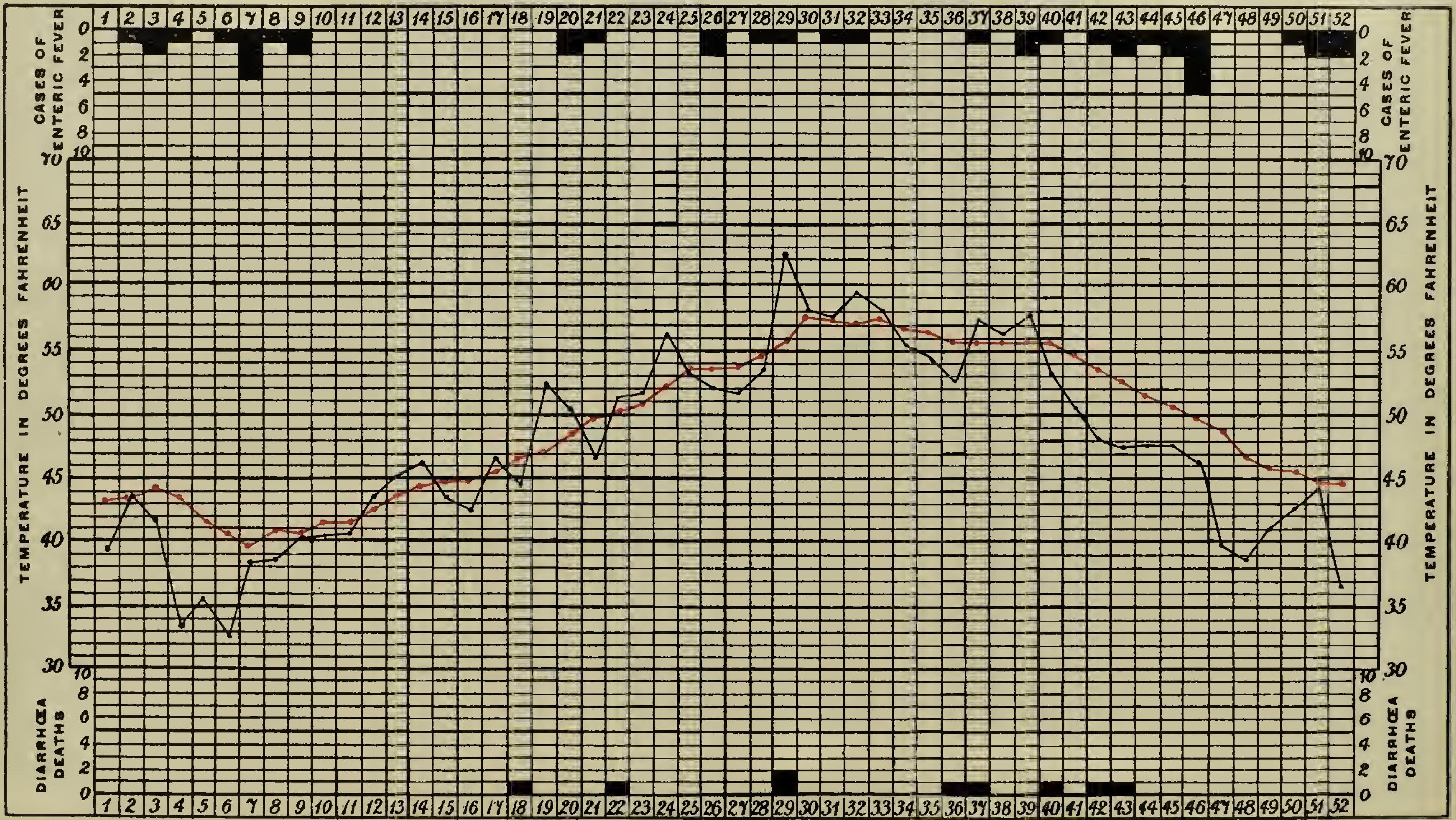
DIARRHŒA.

Compared with previous years, in 1907 Diarrhœa was almost a negligible factor as a cause of death. There were only 9 deaths from this cause during the year. We have to look back to 1888, when the population was only 20,540 to find a year with fewer Diarrhœa deaths. In that year there were only 5. Proportionately to population the 9 deaths in 1907 is a considerably better record. In 1906 there were 35, 30 in 1905, 38 in 1904, 25 in 1903, and 10 in 1902.

The death-rate from Diarrhœa was 0.15 per 1,000, as compared with 0.61 in 1906. The death-rate in England and Wales during 1907 was 0.29; it was 0.40 in the 76 great towns, and 0.29 in the 142 smaller towns. Of the 9 deaths there were 5 children under one year, and 3 between one and five years; in one case the child was illegitimate. There was one death from Epidemic Diarrhœa in Claremont Ward, 6 in Talbot, and 2 in Foxhall.

There was no death from this cause in the first quarter, 2 in the second quarter, 3 in the third quarter, and 4 in the

CHART III. (Mean Weekly Temperatures—Air and Soil. Weekly Enteric Cases and Diarrhœa Deaths, 1907).



fourth quarter of the year. Each death was carefully inquired into, and in Chart III. the relationship between the highest mortality from Diarrhœa and the temperature of the earth at a depth of four feet is shown. In the middle part of the Chart the curves show the mean weekly temperature of the air (black line), and the soil as marked by a thermometer kept four feet from the surface of the ground (red line). At the bottom part of the Chart the weekly number of deaths is marked by shaded columns of a size proportionate to the number of deaths. The four-foot thermometer was over 56° F. for six weeks in the year, from the 30th week to the 36th. Five out of the 9 diarrhœa deaths occurred in the eight weeks after the last week which averaged over 56°.

None of the 5 deaths in children under one occurred in breast-fed infants. All were hand-fed.

Storage of Food.

The following Table gives statistics as to the Storage of Food in houses where diarrhœa deaths have occurred in the last nine years.

Place.	1899	1900	1901	1902	1903	1904	1905	1906	1907
Pantry	19	9	7	3	9	22	9	4	1
Scullery or Back Kitchen	55	34	31	5	14	10	21	27	7
Wooden Safe in Yard .	2	6	—	—	—	—	—	2	—
Cellar......................	2	1	—	2	1	—	—	1	—
Sitting-room or Lobby .	1	4	2	—	—	—	—	—	1
No Particulars	2	1	1	—	1	6	—	1	—

PHTHISIS AND OTHER TUBERCULAR AFFECTIONS.

I desire very seriously to draw the special attention of the Health Committee to the extremely important part which the various manifestations of tuberculosis play in the death-rate of our town. In 1907 they caused 85 deaths out of the total of 788, that is, considerably more than one-tenth. Nor is this an isolated year; in 1906 there were 83. If we take consumption of the lungs alone, and exclude the other forms of tuberculosis, we find on looking at Table A in the Appendix how small is the improvement shown since 1886. For the five years 1886-1890 the rate of mortality was 1.21 for Phthisis only, and in the quinquennium 1901-1905 it was 1.04 per 1,000. This reduction is nothing like proportionate to that observed in the zymotic death-rate in the same period. As consumption is essentially a preventible disease it is not satisfactory to find the death-rate from this cause maintaining so high a level.

On looking at the Chart on page 55 we find that considering deaths of residents only, Phthisis alone caused 50 deaths, and came sixth in the order of principal causes of death. If we include all the various forms of tuberculosis as well as Phthisis, the total is 73, that is, it is one of the greatest factors in our death-rate.

Considering the fact that Phthisis, unlike Cancer bears most heavily on persons between 20 and 40, at the most productive period of life, the matter is a very serious one on economic grounds. I trust that we shall take to heart the words of His Majesty the King in regard to this disease—"If preventible why not prevented?"

The basis of any successful action for reducing the mortality from this just as any other infectious disease is notification. The Health Committee in March, 1906, passed a resolution stating that "it is desirable that Phthisis should be included in the list of compulsorily notifiable diseases." There are, however, certain difficulties in the way of merely extending the Notification of Infectious Diseases Acts to Consumption.

If Consumption were included among the compulsory notifiable diseases, the patient would be liable to penalties for walking in the street, or travelling in a public conveyance, and other similar disabilities would be found to embarass the patient and his friends very much. In a chronic form of infectious disease like Phthisis the procedures under the ordinary notification Acts are not necessary. What is required is to get to know where cases exist, so that patients may be educated in regard to disposal of sputum, and other matters, so that they will be less dangerous to others, and at the same time have the best chance of getting cured themselves. Regular disinfection of houses in which consumptives dwell would also be a safeguard. There is no doubt that the enormous number of visitors to Blackpool, some of whom are in a highly infectious stage of consumption, must involve risk to others inhabiting the same rooms afterwards. Until special legislation is introduced for compulsory notification of tubercular disease under modified conditions, there is no doubt that by wise administration much could be done under a system of voluntary notification.

At present we only hear of cases of Consumption which die. It is true we have the houses disinfected then, but as each case has been infective for months, or even years, it is obvious that our work can only be very incomplete.

Voluntary notification has already been successfully adopted in many towns. Cases are followed up and advice and assistance given where necessary. In many places patients are received for a time either into special sanatoria, or into vacant wards in the ordinary Infectious Diseases Hospital, and are there trained in the benefits of the open air life, and the precautions necessary to avoid risk to others. There has been no attempt to interfere with the freedom of patients, nor with their occupations, unless these occupations involved special risk to the public. It is obviously very dangerous for consumptive patients to be employed in preparing food, or in similar work.

I trust that the Health Committee will give this matter their serious consideration, and decide in the interests of the Public Health, and in the interests of the town as a Health resort, to introduce a system of voluntary notification of Consumption.

In 1907 there occurred in all 61 deaths from Phthisis, giving a death-rate for this disease of 1.04 per 1,000, as compared with 0.91 in 1906. In England and Wales generally the rate for 1906 was 1.15 per 1,000. Out of the 61 deaths 11 were of visitors, leaving 50 residents giving a death-rate of 0.86, as compared with 0.68 in 1906.

The proportion of visitors is not so large as in some previous years, but I would like to repeat my warning against sending advanced cases of this disease to Blackpool. The climate is suitable enough for early cases where the general bodily condition is good, and also for the class of chronic cases in elderly people, but cases in which there is much hæmorrhage or wasting, with poor appetite, often go rapidly worse here ; the strong winds and bracing climate being too much for them.

It has frequently been shown that alcoholic intemperance often leads to Phthisis, and in 10 cases out of the 61 a history of some excessive use of alcohol was obtained. It was probably a contributory factor in other cases also.

As regards family history, 21 cases were found with a distinct record of consumption in other members of the family. This does not necessarily mean a hereditary tendency, although the factor of heredity has to be reckoned with. Still, I am inclined to think more emphasis is laid upon heredity than is justified. Family history of phthisis may simply mean exposure to the same influences, the same environment, and the same sources of infection. In many instances it is probable that the patient acquired infection from the previous case. In one case the father, in two others the mother of the patient, in another both parents had suffered from phthisis, whilst in another the disease had affected the mother and two sisters. In four cases a brother, and in two cases a sister had died of the disease ; in two cases the husband of the patient had been phthisical. In three cases an aunt, in one an uncle, and in one both uncle and aunt had suffered similarly. In one case the father and grandfather, and in another the grandmother only had died of consumption, whilst in another case a child of the patient had so suffered, and in another both son and daughter.

Circulars drawing attention to the dangers of infection were sent to the occupier of every house where a death from pulmonary consumption took place, along with an offer to disinfect free of charge. In 34 cases efficient disinfection was carried out by the officials of the Health Department, and in 23 other cases the occupiers had themselves made some attempt at disinfection, and refused to allow us to disinfect thoroughly.

There were 24 deaths certified as due to other tubercular affections, 8 being under one year of age. The numbers are 7 fewer than in 1906, and precisely the same as in 1905. Only 2 were in visitors, the rest were residents. There were 10 cases of tubercular meningitis, five being in infants. Two were certified as tabes mesenterica, but there were three others certified as tubercular peritonitis, in one case associated with meningitis also. There was one case of tubercular disease of the pleura, and another of tuberculosis of the foot, and five of general tuberculosis. Another case was certified as tubercular enteritis and meningitis, another under the vague heading of "tuberculosis."

Enquiries were made into the milk supply of cases in infants and young children, and in some instances visits to the farms followed, and samples were taken, but no tuberculous cows were found. The duration of these cases makes enquiry of this kind very uncertain. In one instance of general tuberculosis the father, mother, and brother had previously died of some tubercular affection.

DISEASES OF THE RESPIRATORY SYSTEM.

This class of disease is always a great contributor to the death returns, no fewer than 134 being recorded during 1907, as compared with 106 in 1906. The death-rate from these causes was 2.29, as compared with 1.86 in 1906. Of the 134 cases 117 were residents and 17 visitors.

From the three principal diseases of this class, Bronchitis, Pneumonia, and Pleurisy, there were 125 deaths, 15 being in visitors.

The chart on p. 55 indicates how influential Bronchitis and Pneumonia are in swelling the death lists among residents, there being 55 of each. Still the proportion from these causes is less than for England and Wales for 1906.

DISEASES OF THE NERVOUS SYSTEM.

Under this class by far the most important is Apoplexy, which accounted for 59 deaths, 51 residents and 8 visitors. The proportion of cases of death from this cause appears to be considerably higher than in England and Wales generally.

Possibly a more exact knowledge as to the previous history in many of these cases would permit their classification under Diseases of the Heart or Diseases of the Kidney, Apoplexy being often only the final stage in affections of these organs.

CANCER.

Malignant disease in various forms was again a prominent cause of death during 1907, 57 cases occurring, 52 in residents and 5 in visitors. In 1906 there were 59, and in 1905, 58. The total death-rate from this cause was 0.975 per 1,000, as compared with 1.033 in 1906. For residents only the rate was 0.890.

I repeat the table given in last year's report showing the total deaths, the number of visitors' deaths, the gross and nett death-rates from Cancer in Blackpool during the last 13 years.

CANCER MORTALITY IN BLACKPOOL.

YEAR.	Total Deaths	Deaths of Visitors.	Gross Death Rate	Nett Death Rate	England and Wales.
1895	19	3	0.577	0.486	0.753
1896	20	3	0.546	0.464	0.762
1897	33	3	0.820	0.746	0.785
1898	29	7	0.638	0.484	0.799
1899	36	2	0.747	0.705	0.826
1900	49	2	0.976	0.937	0.829
1901	59	5	1.162	1.064	0.842
1902	51	4	0.977	0.901	0.844
1903	55	3	1.037	0.981	0.872
1904	51	10	0.938	0.755	0.877
1905	58	4	1.041	0.969	0.885
1906	59	5	1.033	0.946	0.917
1907	57	5	0.975	0.890	—

This table shows unmistakably that the mortality from Cancer is increasing in Blackpool, and apparently more rapidly than in the rest of the country.

But Cancer mortality should be based not on the total population, but on persons over 35, and taking this limit, in England and Wales in 1906, the death-rate per 1,000 persons over 35 was 2.759. Assuming that the age and sex ratio was the same in Blackpool in 1906 as in the census year 1901, we should have a population of 19,784 persons over 35 years of age, and on 54 resident deaths from Cancer we get a rate of 2.729, which is slightly less than that for the whole country.

For 1907 the population over 35 years of age is calculated at 20,239, giving on 52 resident deaths from Cancer a death-rate at the age period over 35 of 2.569. The corresponding figures for England and Wales are not yet available. This calculation is considerably vitiated by the uncertainty as to whether the age and sex ratio is the same now as in 1901.

Of the 57 deaths from Cancer 41 were in females and 16 in males. The parts of the body affected are shown in the following table :—

Site of disease.	Males.	Females.	Total.
Liver	1	8	9
Stomach	—	5	5
Rectum	1	4	5
Bowels	4	5	9
Pancreas	1	1	2
Organs of Reproduction...	3	6	9
Breast	—	3	3
Other sites	6	9	15
	16	41	57

Two of the cases affecting the bowels in males were stated to be sarcoma. All the rest were presumably carcinoma. In 16 cases there was a definite history of cancer in relatives. In the case of two males, the grandfather of one and the aunt of another, had died of Cancer.

As regards female cases it was noteworthy that in 5 cases the mother of the patient had died of Cancer, while in a sixth both father and mother were affected. One patient had had three aunts all affected, in three cases an aunt had suffered from the disease, in two cases a sister, and in another the grandmother.

INFLUENZA.

Influenza was credited as being the primary cause of death in 11 instances in 1907, all being residents. January was the worst month for this disease.

DISEASES OF THE CIRCULATORY SYSTEM.

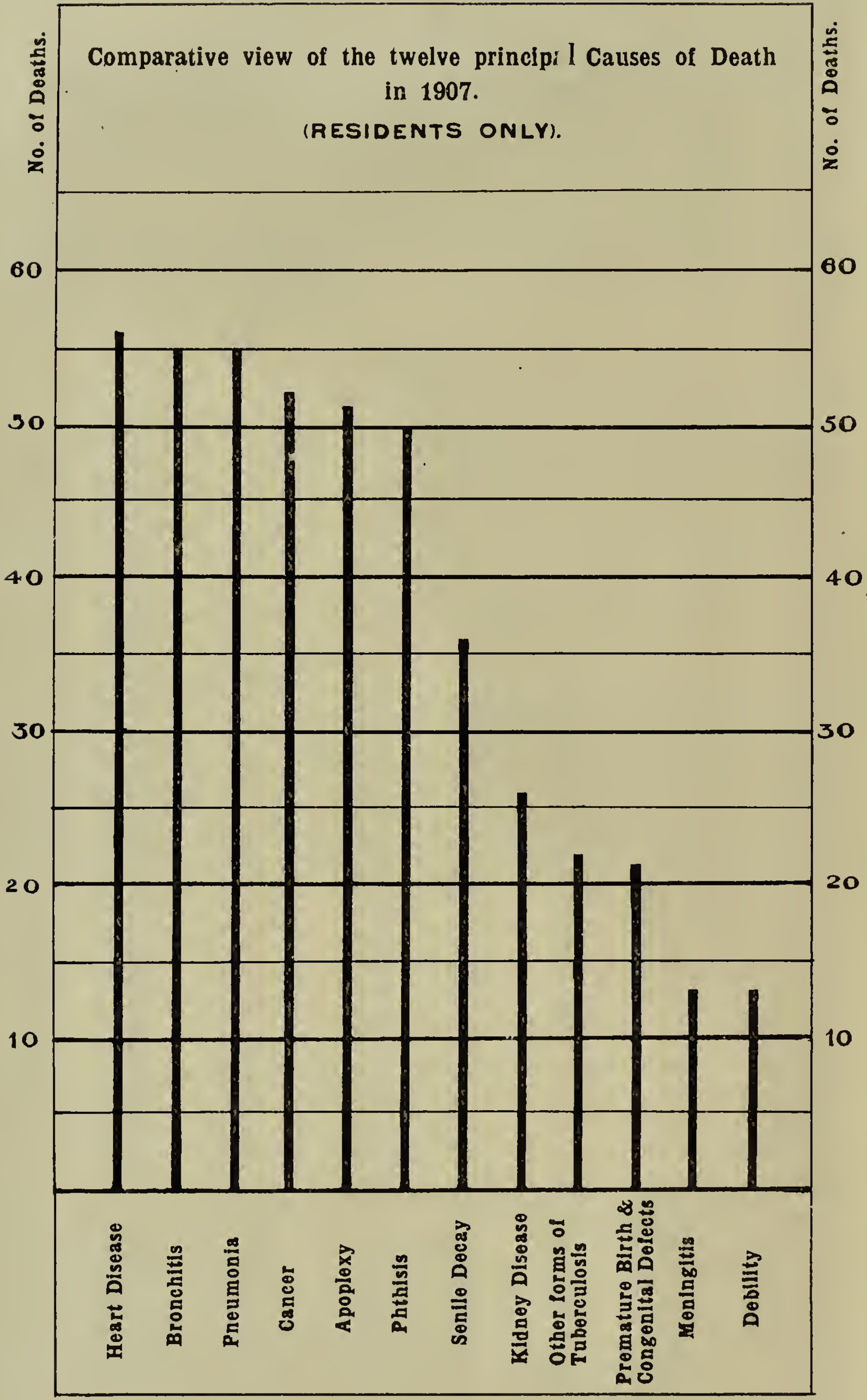
These caused 81 deaths during 1907, including 18 visitors, and form a very serious proportion of our death returns. The total figure is higher than the preceding year, and the death-rate is 1.39 per 1,000 inhabitants as compared with 1.28 in 1906. The comparative figures for a series of years will be found in Table A (Appendix).

ALCOHOL.

To obtain a correct idea of the true influence of alcoholi excess on the death-rate is practically impossible. At th present time the certificate of the cause of death is hande by the medical attendant to the relatives of the patien and he is naturally averse from hurting their feelings b laying stress on the part played by alcohol in the causatio of the fatal disease. In cases even where alcohol is th principal cause the certificate will possibly bear no mentio of it, but only of diseases induced by the alcohol.

Comparative view of the twelve principal Causes of Death in 1907.

(RESIDENTS ONLY).



Only 5 deaths were attributed directly to drink, 4 to chronic alcoholism, and one to delirium tremens. But in addition probably all seven cases certified as cirrhosis of the liver had an alcoholic origin, and the same remark would apply to three cases of peripheral neuritis. In addition a history of alcoholic excess was obtained in ten cases of phthisis, and there was either a definite history or strong grounds for suspicion of the same in eight other cases, including one of Bright's disease, 2 pneumonia, 2 diseases of nervous system, &c. This gives a total of 33 in which there was good reason to suspect that undue indulgence in strong drink was directly or indirectly associated with the fatal result. Probably further knowledge would have materially extended this list. It is very probable that alcohol was a predisposing cause in some of the numerous deaths from apoplexy.

OTHER CAUSES.

Table IX. gives a detailed analysis of the various causes of death during 1907, including the total number of cases of each class of disease, divided into males and females, visitors, and residents, and into various age periods, also the number of cases in each Ward. This is only a summary of the figures contained in our Record Book of Vital Statistics, which gives similar information for each month of the year.

The diagram opposite exhibits in a striking form the proportion of deaths from the twelve principal causes, for residents only. Heart disease, in its various forms, heads the list with 56. It will be observed that Phthisis is also a heavy contributor to the death returns.

UNCERTIFIED DEATHS.

There were 22 deaths, the causes of which were uncertified either by the Coroner or by a Registered Medical Practitioner, being 2.79 per cent. of the total deaths. In 1906, the uncertified deaths were 2.59 per cent. of the total deaths; in 1905, 3.83; in 1904, 4.61; and in 1903, 5.35 per cent. It is satisfactory to find a considerable reduction in the proportion of these cases.

Nearly all these have been entered under the classification of "Natural Causes," although in some cases the deaths were attributed to such causes as "Heart Disease," "Heart Failure," "Apoplexy." Two cases in which enquiries were made were classified as Phthisis, one as Cancer, and another as Bronchitis. The proportion in the rest of England and Wales for 1906 was 1.4 per cent., so that though the Blackpool figures are lower than before they are still much higher than in the country generally.

DEATHS FROM VIOLENCE.

The number of deaths classified under this heading was 27 for the year 1907, including 10 visitors, as compared with 43 in 1906. The rate is 0.46 per 1,000 of the population, as compared with 0.56 for all England and Wales. These may be classified thus:—

	Accident.	Suicide.	Homicide.	Total.
Poison	—	1	—	1
Drowning	6	1	—	7
Hanging	—	1	—	1
Suffocation	4	—	—	4
Otherwise	14	—	—	14

INQUESTS.

The number of inquests held during the year by the Coroner was 35. The rate of inquest deaths was 44.41 per 1,000 of deaths, as compared with 69 per 1,000 in all England and Wales.

The following is an analysis of the verdicts :—

Accidental Drowning	6
Accidental Injuries	10
Apoplexy caused by shock	1
Natural Causes	2
Misadventure—suffocation—overlying	1
,, Asphyxia—Tripe and Chips	1
,, Heart failure under Chloroform	1
Found Dead	1
Suicide—Drowning	1
,, —Carbolic Acid poisoning	1
Natural Causes—Apoplexy	1
,, ,, —Asphyxia	1
,, ,, —Heart failure	1
Accidental suffocation—False teeth	1
Accidental fall—Senile decay	1
Accidental septicaemia and Heart failure	1
Asphyxia from Natural Causes	1
Excessive Drinking	2
Starvation—Malassimilation of food	1

TABLE IX. (Part I).

Analysis of Causes of Deaths at several Groups of Ages from Different Causes.
52 Weeks ending December 28th, 1907.

			AGES AND SEXES.																								WARDS.							
	CAUSE OF DEATH.	Resident or Visitor	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
			M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	1	2	3	4	5	6	7	8
I.	SPECIFIC FEBRILE or ZYMOTIC DISEASES	R	10	8	8	14	18	22	5	9	4	8	7	7	8	9	5	7	4	...	5	4	...	2	56	68	17	32	1	26	33	15	124	22
		V	1	...	2	...	3	....	...	...	...	1	2	3	2	3	2	...	...	...	...	...	...	...	9	7	2	3	....	5	4	2	16	2
II.	PARASITIC DISEASES	R	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	....	....	....	1	1	....	2	....
		V	...	...	...	...	....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	....	....	....	....	....	....	....	....	....
III.	DIETETIC DISEASES	R	...	...	...	...	....	....	...	...	...	...	1	...	1	1	...	1	...	...	...	...	...	...	2	2	....	1	....	1	1	1	4	....
		V	...	...	...	...	....	....	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	....	1	....	....	....	....	....	1	1	....
IV.	CONSTITUTIONAL DISEASES ...	R	...	1	1	...	1	1	1	1	...	1	1	2	3	3	6	12	7	11	5	11	3	4	27	46	12	8	4	15	19	15	73	4
		V	...	...	...	...	....	....	...	...	...	...	2	2	1	3	3	1	2	...	...	1	...	...	8	7	9	2	....	....	2	2	15	3
V.	DEVELOPMENTAL DISEASES ...	R	12	9	...	...	12	9	...	...	...	...	...	...	...	...	...	1	...	...	7	8	11	9	30	27	11	9	4	9	15	9	57	8
		V	...	...	...	...	....	....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	....	...	....	....	....	1	....	1	....
VI.	LOCAL DISEASES	R	40	18	12	9	52	27	4	7	2	10	6	3	15	19	27	24	32	32	30	35	23	22	191	179	56	73	14	59	120	48	370	31
		V	1	...	3	1	4	1	1	...	1	2	...	1	3	5	6	1	9	8	6	7	3	4	33	29	15	7	3	13	17	·7	62	9
VII.	DEATHS FROM VIOLENCE	R	...	3	...	...	....	3	...	...	1	...	1	...	...	...	3	2	3	...	3	...	...	1	11	6	1	3	....	4	6	3	17	4
		V.	...	...	...	1	....	1	...	...	4	1	4	...	...	...	...	...	...	...	...	...	...	...	8	2	5	1	....	1	3	....	10	3
VIII.	DEATHS FROM ILL-DEFINED and not SPECIFIED CAUSES	R	11	3	...	1	11	4	...	...	...	...	...	...	3	...	4	1	1	1	1	2	1	1	21	9	2	6	....	4	12	6	30	1
		V	...	...	...	...	....	....	...	...	...	...	...	...	1	...	1	...	...	2	1	...	...	1	3	3	2	....	1	1	2	....	6	....
	Grand Totals	R	74	43	21	24	95	67	10	17	7	19	16	12	30	32	45	48	47	44	51	60	38	39	339	338	99	132	23	119	207	97	677	70
		V	2	...	5	2	7	2	1	...	5	4	8	6	7	12	12	2	11	10	8	8	3	5	62	49	33	13	4	20	29	12	111	17

TABLE IX. (Part II. Residents only).

CAUSE OF DEATH.	AGES AND SEX.																										WARDS.							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		Total		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	Total	Instituti'ns
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	1	2	3	4	5	6	7	8
SPECIFIC, FEBRILE, or ZYMOTIC DISEASES.																																		
1.—Miasmatic Diseases.																																		
Smallpox { Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Un-vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No statement	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Scarlet Fever	...	...	...	2	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	2	1	...	...	1	...	4	
Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	1	1	1	2	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	1	...	...	1	2	1	5	...
Diphtheria, Membranous Croup	...	1	1	3	1	4	2	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	4	6	1	2	...	4	...	3	10	5
Simple continued and Ill-defined Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric or Typhoid Fever	...	...	...	...	...	...	...	2	1	2	...	1	1	1	...	1	...	...	...	...	...	...	2	7	2	...	...	3	2	2	9	4
Tabes Mesenterica	1	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	1	2	1
Tubercular Meningitis, Hydrocephalus	5	...	1	3	6	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	4	1	1	...	3	4	1	10	...
Phthisis	...	...	...	1	...	1	...	2	2	6	7	4	5	8	4	5	4	...	1	1	...	...	23	27	8	15	1	10	13	3	50	6
Other forms of Tuberculosis, Scrofula	...	2	2	2	2	4	...	2	...	...	...	1	...	...	...	...	...	...	...	1	...	...	2	8	1	4	...	3	1	1	10	1
Other Miasmatic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	4	2	...	2	6	5	...	3	...	1	4	3	11	1
2.—Diarrhœal Diseases.																																		
Simple Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa, Dysentery	2	3	2	1	4	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	4	1	6	...	...	2	...	9	...
3.—Malarial Diseases.																																		
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE IX. (Part II.—Continued).

CAUSE OF DEATH.	AGES AND SEX.																								WARDS.							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	1	2	3	4	5	6	7	8
4.—ZOOGENOUS DISEASES.																																
Cowpox and Effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases, Hydrophobia, Glanders, Splenic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5.—VENEREAL DISEASES.																																
Syphilis	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6.—SEPTIC DISEASES.																																
Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pyæmia, Septicæmia	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2	...	2	1
Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
II.—PARASITIC DISEASES.																																
Thrush and other Vegetable Parasitic Diseases	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	1	...	2	...
Worms, Hydatids, and other Animal Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
III.—DIETETIC DISEASES.																																
Want of Breast Milk, Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Alcoholism	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	1	2	...	1	...	1	...	1	3	...
Delirium Tremens	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...

TABLE IX. (Part II.—Continued).

	AGES AND SEX.																										WARDS.							
CAUSE OF DEATH.	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	1	2	3	4	5	6	7	8
IV.—CONSTITUTIONAL DISEASES																																
Rheumatic Fever, Rheumatism of the Heart	...	...	I	...	I	....	I	I	...	...	...	I	...	...	...	...	...	...	...	...	...	...	2	2	....	....	I	I	2	....	4	....
Rheumatism	...	...	...	...	....	....	...	...	...	...	...	...	...	...	I	...	...	...	I	...	...	...	2	....	....	....	....	I	I	....	2	....
Gout	...	...	...	...	....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	....	....	....	....	....	....	....	....	....
Rickets	...	...	...	...	....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	....	....	....	....	....	....	....	....	....
Cancer, Malignant Disease	...	...	...	...	....	....	...	...	...	...	...	I	I	2	4	II	5	10	2	10	2	4	14	38	9	6	2	II	15	9	52	4
Purpura, Hæmorrhagic Diathesis	...	...	...	...	....	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	....	....	....	....	....	....	....	....	....
Anæmia, Chlorosis, Leucocythæmia	...	I	...	...	....	1	...	...	...	...	...	...	...	...	...	...	I	...	I	...	I	...	3	I	I	....	....	....	....	3	4	....
Glycosuria, Diabetes Mellitus	...	...	...	...	....	....	...	...	...	I	I	...	I	I	I	I	I	...	I	I	...	...	5	4	I	2	I	2	....	3	9	....
Other Constitutional Diseases	...	...	...	...	....	....	...	...	...	...	...	...	I	...	...	...	...	I	...	...	...	...	I	I	I	....	....	....	I	....	2	....
V.—DEVELOPMENTAL DISEASES																																
Premature Birth	10	9	...	...	10	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	9	I	2	3	6	5	2	19	....
Atelectasis	I	...	...	...	I	....		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	I	....	....	....	....	....	I	....	I	....
Congenital Malformations	I	...	...	...	I	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	I	....	I	....	....	....	....	....	I	....
Old Age	...	...	...	...	....	....	...	...	...	...	...	...	...	...	...	I	...	...	7	8	II	9	18	18	9	7	I	3	9	7	36	8
VI.—LOCAL DISEASES.																																
I.—DISEASES OF NERVOUS SYSTEM.																																
Inflammation of Brain or Membranes	3	I	2	3	5	4	...	2	...	...	...	...	...	...	I	I	...	...	...	...	...	...	6	7	2	3	....	I	6	I	13	I
Apoplexy, Softening of the Brain, Hemiplegia, Brain Paralysis	...	...	...	...	....	....	...	...	...	...	I	...	...	I	6	3	4	9	7	5	9	6	27	24	4	8	3	9	17	10	51	2
Insanity, General Paralysis of the Insane	...	...	...	...	....	....	...	...	...	...	...	...	...	...	...	I	I	I	...	...	...	...	I	2	....	I	....	....	....	2	3	....
Epilepsy	...	...	I	...	I	....	I	...	I	...	...	...	I	...	...	I	...	...	...	...	...	...	4	I	I	I	....	1	2	....	5	....
Convulsions	6	3	I	...	7	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	3	3	2	....	....	4	I	10	....

TABLE IX. (Part II.—Continued).

CAUSE OF DEATH.	AGES AND SEX.																										WARDS.							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*		2	3	4	5	6	7	8
Laryngismus Stridulus (Spasm of Glottis)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	2	1	3	...	...	...	2	2	...	4	1
Other Diseases of Nervous System	1	...	...	...	1	...	...	...	...	...	...	...	...	2	2	...	1	2	...	...	1	...	5	4	...	2	...	3	3	1	9	...
2.—DISEASES OF ORGANS OF SPECIAL SENSE.																																
Of Ear, Eye, Nose	1	...	...	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	1	...	...	1	1	3	1
3.—DISEASES OF CIRCULATORY SYSTEM.																																
Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Endocarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
Valvular Diseases of Heart	...	...	...	...	...	...	...	2	...	...	...	...	...	1	1	2	...	2	3	2	3	1	7	10	2	2	...	4	4	5	17	...
Other Diseases of Heart	1	...	...	...	1	...	...	1	...	...	1	1	3	1	2	3	2	4	4	8	4	3	17	21	5	9	1	4	15	4	38	4
Aneurism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Embolism, Thrombosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	1	2	3	2	1	...	2	...	...	5	...
Other Diseases of Blood Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...	...	1	...	1	2	...
4.—DISEASES OF RESPIRATORY ORGANS																																
Laryngitis	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	...	1	...	...	1	...	2	...
Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Emphysema, Asthma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	1	...
Bronchitis	5	1	2	...	7	1	1	...	...	...	...	...	...	2	2	4	8	5	6	9	3	7	27	28	13	9	2	10	16	5	55	3
Pneumonia	14	9	5	3	19	12	1	...	...	4	2	...	3	3	3	...	2	1	3	1	...	1	33	22	8	16	2	5	21	3	55	3
Pleurisy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Respiratory System	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	...	...	4	...	...	...	...	2	1	1	4	...

TABLE IX. (Part II.—Continued).

CAUSE OF DEATH.	AGES AND SEX.																						WARDS.							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL.		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	1	2	3	4	5	6	7	8
5.—DISEASES OF DIGESTIVE SYSTEM.																																
Dentition	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...
Sore Throat, Quinsy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Stomach	3	...	...	...	3	...	...	...	1	1	...	...	...	1	...	...	...	1	...	...	1	...	5	3	3	1	1	...	2	1	8	1
Enteritis	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	1	...	...	...	1	2	...
Obstructive Diseases of Intestines	1	...	1	...	2	...	...	...	...	...	1	1	...	1	...	1	...	1	1	1	...	1	4	6	2	1	...	2	3	2	10	3
Hernia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peritonitis	...	...	...	1	...	1	...	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	2	2	...	1	...	1	...	2	4	1
Ascites	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis of Liver	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	3	1	...	...	...	...	...	4	3	2	1	...	...	2	2	7	1
Jaundice and other Diseases of Liver	...	2	...	...	...	2	...	...	...	...	...	...	1	...	1	1	...	1	1	1	1	...	4	5	4	1	...	1	3	...	9	2
Other Diseases of Digestive System	2	...	...	...	2	...	...	1	...	3	...	...	...	2	1	...	1	...	...	...	...	...	4	6	1	2	1	3	1	2	10	3
6.—DISEASES OF LYMPHATIC SYSTEM																																
Of Lymphatics and Spleen	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7.—DISEASES OF GLANDLIKE ORGANS OF UNCERTAIN USE.																																
Bronchocele, Addison's Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...
8.—DISEASES OF URINARY SYSTEM.																																
Nephritis	...	1	...	...	...	1	...	...	...	...	...	...	1	1	...	2	5	3	1	2	1	...	8	9	1	4	1	2	6	3	17	...
Bright's Disease, Albuminuria	...	1	...	...	...	1	...	...	...	...	...	...	...	...	3	...	2	2	...	1	...	...	5	4	...	3	...	2	4	...	9	2
Disease of Bladder or of Prostate	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	1	...
Other Diseases of the Urinary System	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	1	...	...	...	...	...	3	1	...	...	2	1	1	...	4	1

TABLE IX. (Part II.—Continued.)

CAUSE OF DEATH.	AGES AND SEX.																								WARDS.							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	1	2	3	4	5	6	7	8
9.—DISEASES OF REPRODUCTIVE SYSTEM																																
(*a*) *Of Organs of Generation.*																																
Male Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Female Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	2	...	1	...	1	...	...	2	1
(*b*) *Of Parturition.*																																
Abortion, Miscarriage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Convulsions	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...
Placenta Prævia, Flooding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Accidents of Childbirth	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	2	...
10.—DISEASES OF BONES AND JOINTS.																																
Caries, Necrosis	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	1	...
Arthritis, Osteitis, Periostitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Bones and Joints	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11.—DISEASES OF INTEGUMENTARY SYSTEM.																																
Carbuncle, Phlegmon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Integumentary System	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	2	1	1	...	1	...	1	...	3	...
VII.—DEATHS from VIOLENCE																																
1.—ACCIDENT OR NEGLIGENCE.																																
Fractures and Contusions	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burns, Scalds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE IX. (Part II.—Continued.)

CAUSE OF DEATH	AGES AND SEX. 0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		WARDS. Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	1	2	3	4	5	6	7	8
Poison	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Suffocation	...	2	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	2	...	...	...	1	2	...	3	...
Otherwise	...	1	...	...	...	1	...	...	1	...	...	...	...	...	2	...	2	...	3	...	...	1	8	2	...	3	...	1	3	3	10	4
2.—HOMICIDE.																																
Manslaughter	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murder	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3.—SUICIDE.																																
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poison	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...
Drowning	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
Hanging	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VIII.—DEATHS from ILL-DEFINED and not SPECIFIED CAUSES																																
Dropsy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Debility, Atrophy, Inanition	8	3	...	...	8	3	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	9	4	1	2	...	2	5	3	13	1
Mortification	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	1	...
Tumour	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	1	...
Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sudden Death (cause not ascertained)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Natural Causes	3	...	...	1	3	1	...	...	...	...	...	...	3	...	4	1	1	...	...	1	1	...	12	3	1	4	...	2	5	3	15	...
Injury at Birth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	74	43	21	24	95	67	10	17	7	19	16	12	30	32	45	48	47	44	51	60	38	39	339	338	99	132	23	119	207	97	677	70

TABLE IX. (Part III. VISITORS ONLY.)

CAUSE OF DEATH.	AGES AND SEX.																										WARDS.							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	1	2	3	4	5	6	7	8
I.—SPECIFIC, FEBRILE, OR ZYMOTIC DISEASES.																																
1.—MIASMATIC DISEASES.																																
Whooping Cough	1	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	1	...	2	...
Enteric or Typhoid Fever	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...
Phthisis	...	...	...	...	...	...	...	...	...	1	1	2	2	3	2	...	...	...	...	...	...	...	5	6	1	3	...	3	2	2	11	...
Other forms of Tuberculosis, Scrofula	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	1	...	2	2
III.—DIETETIC DISEASES.																																
Chronic Alcoholism	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...
IV.—CONSTITUTIONAL DISEASES																																
Rheumatic Fever, Rheumatism of the Heart	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
Cancer, Malignant Disease	...	...	...	...	...	...	...	...	...	...	...	...	1	2	1	1	...	...	...	...	...	...	2	3	3	...	...	...	1	1	5	2
Anæmia, Chlorosis, Leucocythæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	2	1
Glycosuria, Diabetes Mellitus	...	...	...	...	...	...	...	...	...	...	1	2	...	...	1	...	2	...	...	1	...	...	4	3	5	2	...	...	...	...	7	...
V.—DEVELOPMENTAL DISEASES																																
Old Age	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	1	...

TABLE IX. (Part III. VISITORS ONLY—Continued).

CAUSE OF DEATH.	AGES AND SEX.																								WARDS							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		TOTAL		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	TOTAL	Instituti'ns
VI.—LOCAL DISEASES.	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	1	2	3	4	5	6	7	8
1.—DISEASES OF NERVOUS SYSTEM.																																
Inflammation of Brain or Membranes	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	3	...	2	...	...	3	5	1	1	...	1	4	1	8	2
Other Diseases of Nervous System	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	1	2	...
3.—DISEASES OF CIRCULATORY SYSTEM																																
Acute Endocarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
Valvular Diseases of Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	1	...	1	1	4	1	2	...	2	...	...	5	...
Other Diseases of Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	3	1	2	...	1	1	6	5	3	...	1	2	4	1	11	...
Embolism, Thrombosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
4.—DISEASES OF RESPIRATORY ORGANS																																
Emphysema, Asthma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Bronchitis	1	...	1	...	2	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	1	1	5	2	2	1	...	2	1	1	7	...
Pneumonia	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	1	2	...	...	...	4	2	1	1	2	2	...	...	6	...
Pleurisy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	...	...	...	1	...	1	2	...
Other Diseases of Respiratory System	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...
5.—DISEASES OF DIGESTIVE SYSTEM.																																
Disease of Stomach	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	1	1	3	...	...	...	...	4	...	4	2
Obstructive Diseases of Intestines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	2	...	...	...	...	...	2	...
Peritonitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	1
Other Diseases of Digestive System	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	1	1	...	...	...	...	2	1

TABLE IX. (Part III. Visitors only—Continued).

CAUSE OF DEATH.	AGES AND SEX.																								WARDS.							
	0 to 1		1 to 5		Total under 5 years		5 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 75		75 and ov'r		Total		Claremont	Talbot	Bank Hey	Brunswick	Foxhall	Waterloo	Total	Instituti'ns
6.—Diseases of Urinary System.	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	1	2	3	4	5	6	7	8
Nephritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	1	...
Disease of Bladder or of Prostate	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...
Other Diseases of the Urinary System	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	1	1	...	2	1
7.—Disease of Reproductive System																																
(*a*) *Of Organs of Generation.*																																
Female Organs	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	2	1	...	...	...	1	...	2	2
(*b*) *Of Parturition.*																																
Abortion, Miscarriage	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...
VII.—DEATHS FROM VIOLENCE.																																
1.—Accident or Negligence.																																
Drowning	...	...	...	...	...	...	...	...	3	1	1	...	...	...	...	...	...	...	...	...	...	...	4	1	5	...	...	...	...	...	5	...
Suffocation	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...
Otherwise	...	...	...	1	...	1	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	3	1	...	1	...	...	3	...	4	3
VIII.—DEATHS from ILL-DEFINED and not SPECIFIED CAUSES																																
Natural Causes	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2	1	...	...	1	3	3	2	...	1	1	2	...	6	...
Totals	2	...	5	2	7	2	1	...	5	4	8	6	7	12	12	2	11	10	8	8	3	5	62	49	33	13	4	20	29	12	111	17

PART II.—INFECTIOUS DISEASES.

NOTIFICATION OF INFECTIOUS DISEASE.

For 20 years notification of infectious disease was enforced in the Borough under Section 75 of the Blackpool Improvement Act, 1879, under which small-pox, infectious cholera, measles, diphtheria, typhus, typhoid, scarlet, relapsing, and puerperal fever, were notifiable diseases. This section was repealed by the Infectious Disease (Notification) Extension Act, 1899, which came into operation on January 1st, 1900. Measles was at once added as a notifiable disease. Chicken-pox was added temporarily in May, 1903, and this remained in force until the middle of 1905.

Attention is again called to the fact that the occupier of a building in which a case of one of the notifiable diseases occurs is liable to the infliction of penalties if he does not forthwith notify the existence thereof to the Medical Officer of Health, and that he will not escape from the attendant troubles by purposely not calling in a medical man.

During the year 1907 there were reported altogether 776 cases of infectious disease, compared with 816 last year, but excluding measles (which is not notifiable in many towns), and chicken-pox, we have 317 cases as compared with 305 last year. Scarlet Fever cases were less in number than in 1906, but there was a considerable increase in the cases of Diphtheria. Typhoid Fever showed an increase of two.

There were again a fairly large number of measles cases, 309 in all, and 1 case notified as German measles.

The incidence of three of the most important infectious diseases for the various months in the year is shown graphically in Chart IV. The scarlet fever curve shows a marked rise during the visiting season, leading to a considerable outbreak in the town towards the end of the year.

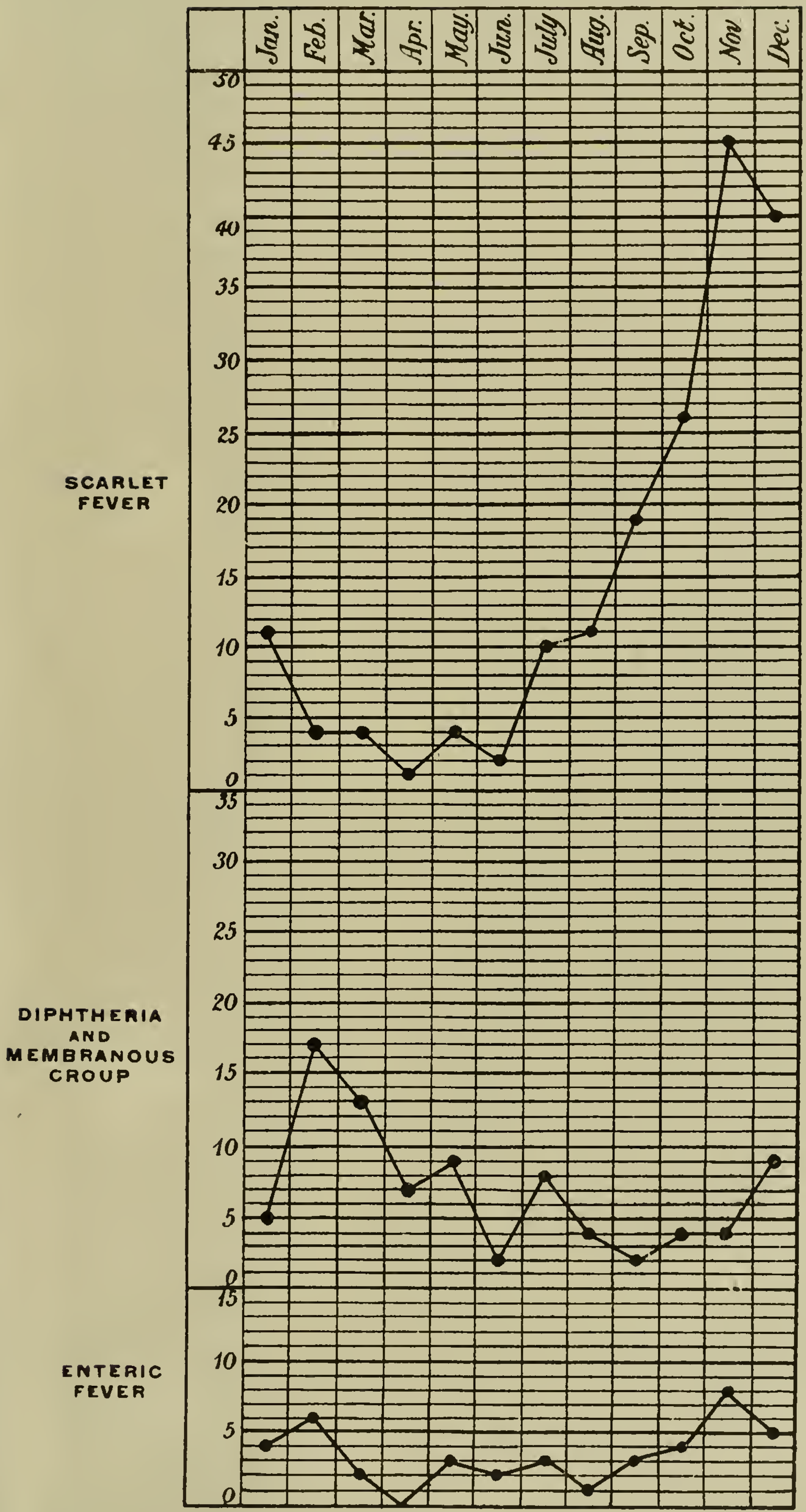
The following Table XV. also shows the variation in the months.

TABLE XV.

(Cases of Infectious Disease notified).

DISEASE.	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	16	3	7	13	11	9	16	31	7	42	61	93	309
Rötheln............	...	...	...	...	...	...	1	...	...	...	...	...	1
Scarlet Fever....	11	4	4	1	4	2	10	11	19	26	45	40	177
Diphtheria	5	17	13	7	9	2	8	4	2	4	4	9	84
Enteric Fever....	4	6	2	...	3	2	3	1	3	4	8	5	41
Puerperal Fever.	...	...	...	...	...	...	...	...	2	...	...	...	2
Erysipelas.........	2	3	...	...	1	...	1	1	2	...	1	2	13
Membranous Croup	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken Pox	3	2	6	4	3	11	15	6	5	14	48	32	149
TOTALS	41	35	32	25	31	26	54	54	40	90	167	181	776

CHART IV. (Infectious Diseases, 1907).



In Table XIII. in the Appendix will be found a classification showing the number of persons attacked at various age-periods, and also the number of cases removed to Hospital from each locality.

The next Table shows the number of houses infected with the different diseases for each month of the year :—

TABLE XVI.

DISEASE.	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	11	3	5	10	11	7	14	27	5	31	40	70	234
Rötheln...........	...	...	...	...	...	...	1	...	...	...	...	...	1
Scarlet Fever....	11	4	3	1	3	2	10	11	18	21	36	36	156
Diphtheria	5	16	11	5	6	2	7	4	1	4	4	8	73
Enteric Fever ...	4	6	1	...	3	2	2	1	3	4	8	5	39
Puerperal Fever.	...	...	...	...	...	...	...	...	2	...	...	...	2
Erysipelas.........	2	3	...	...	1	...	1	1	2	...	1	2	13
Membranous Croup ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken pox	2	2	6	4	3	10	12	6	5	11	36	19	116
TOTALS......	35	34	26	20	27	23	47	50	36	71	125	140	634

The following Table gives the number of infectious cases notified as compared with the previous year; the deaths from these diseases, the percentage case-mortality, and the death-rate for each disease per 1,000 inhabitants, as compared with the similar rates for the 76 great towns in 1907 :—

TABLE XVII.

(Totals :—Residents and Visitors).

DISEASE.	Cases Notified		Cases Notified per 1,000 inhabitants	Total Deaths in 1907	D.R. per 100 cases.	D.R. per 1,000 inhabitants	D.R. per 1,000 inhabitants for 76 great towns
	1907	1906					
Small Pox	...	9	...	...	...	...	...
Rötheln...........	1	6	0.02	...	...	...	...
Measles	309	389	5.29	1	0.32	0.02	0.43
Scarlet Fever....	177	183	3.25	4	2.26	0.07	0.12
Diphtheria	84	53	1.44	10	11.90	0.17	0.17
Membranous Croup ...	...	1	...	...			
Enteric Fever ...	41	39	0.70	10	24.39	0.17	0.07
Typhus Fever .	...	...	...	...	...	...	...
Puerperal Fever	2	2	0.03	...	...	...	...
Erysipelas.........	13	18	0.22	...	...	...	...
WhoopingCough	...	...	...	7	...	0.12	0.35
Diarrhœa	...	...	...	9	...	0.15	0.40
Chicken-pox	149	116	2.55	...	...	...	...

The cost of notification fees to medical men has been as follows :—

	£	s.	d.
Measles	29	7	6
Scarlet Fever	18	12	6
Diphtheria	9	15	0
Enteric Fever	4	10	0
Erysipelas	1	12	6
Puerperal Fever	0	5	0
Membranous Croup		—	
Small-pox		—	
Chicken-pox	5	7	6
	£69	10	0

SCHOOL CLOSURE, 1907.

The following Table gives a list of the instances of School Closure during 1907 :—

School.	Cause.	Closed. From	To
South Shore (Infants' Dept.) .	Diphtheria and Whooping Cough.	Feb. 28 .	Mar. 18
Revoe (Infants' Dept.)	Measles	Nov. 9 ...	Nov. 18

School Closure is a procedure which up to the present, I am afraid, has frequently been carried out on the principle of "locking the stable door after the steed is stolen." Instead of being, as it was intended, a mere preventive measure in the interests of Public Health, put in force at the psychological moment, it is often deferred out of consideration for supposed educational advantages, and then instituted at an advanced stage, when all the susceptible material is probably already infected, in order to satisfy the teachers and school managers who are anxious about their bad attendance records.

Personally, I am of opinion that for Scarlet Fever and Diphtheria it is rarely necessary to enforce either partial or complete School Closure. Close inspection and observation of class contacts, and exclusion of children with suspicious symptoms, along with careful disinfection of the school premises, books, implements, &c., will usually prove successful in bringing an outbreak to a close. In the instance given above I should probably not have closed the South Shore Infants' Department last spring had it not been that there was an outbreak of Whooping Cough as well as Diphtheria.

Measles is the one disease in which School Closure is a really effective method of prevention; in this disease the infection being so very powerful for several days before the rash appears, thus making exclusion by inspection of contacts of little use. But to be effective the closure should be prompt, and preferably on the occurrence of the very first case in a school. It is obvious that if the first case infects 10 or 12 others, each of these, before their own disease appears, is capable of infecting a similar number, so that the infection is already widespread on the occurrence of the first extension cases. A closure of 7 days (which need only affect one class or department), from the 9th to the 16th day after the rash in the first case may nip the outbreak in the bud by enabling us to find and exclude all those who have been infected by the first case.

I have tried this method successfully on several occasions in small schools, and I am glad to see that in their recent circular the Local Government Board, for the first time, definitely approves this procedure. When Measles appeared in All Saint's School in October it was already the second batch of cases, the originating case never being definitely discovered, so that this method could not be adopted. When a case occurred at Revoe it was tried, but unfortunately just failed owing to a child being present on the opening day who had been infected from another source and developed the Measles rash the same day. This illustrates the difficulty of dealing with a school when other schools in the same neighbourhood are also affected.

SMALL-POX.

For the first time since coming to Blackpool I have the pleasure of reporting that the year was entirely blank as regards Small-pox, not a single case being recorded during 1907. This, of course, coincides with the great diminution of this disease in England during the past twelve months.

Unfortunately, it is only too probable that the increasing neglect of vaccination will lead inevitably to a larger population of susceptible persons, and the next introduction of the disease into England will probably be followed by a more serious and more extensive outbreak than that which we have experienced during recent years.

CHICKEN-POX.

In March, 1903, owing to the spread of Small-pox in various parts of the country, and in order that any suspicious case might come under the notice of the Health Department, the Health Committee resolved to have Chicken-pox included among the compulsorily notifiable diseases. This resolution was ratified by the Council and came into force in May, and continued for two years, until the middle of 1905, when it was not renewed.

During 1907, however, we received intimation from various sources of 149 cases occurring in 116 different houses. The largest number of cases came to our knowledge in November, 48 ; there were 32 in December. Two cases were undoubtedly "imported."

MEASLES.

The number of cases reported in 1907 was considerably less than in 1906, being 309 altogether. A large proportion of these, 196, occurred in October, November, and December, and this outbreak extended into the early months of 1908. The number of cases for each month of the year is shown in Table XV.

It is particularly noteworthy as indicating the great liability there is in Blackpool to the introduction of infectious disease by means of visitors that out of 108 cases reported from the beginning of the year up to the end of August no fewer than 50 were "imported" cases, *i.e.*, the infection had been acquired outside Blackpool, although the patients only developed the characteristic rash after arrival here. Some of the cases in residents could be traced directly to such imported cases. None of the schools were seriously affected until after September was over, although a few odd cases cropped up at various schools. But in October, All Saint's School, Tyldesley Road, had a sharp outbreak, the disease spreading then to Revoe School, which was also severely affected, requiring the Closure of the Infants' Department.

The Children's Charity Concert on December 12th, 1907, was unfortunately responsible for spreading the disease more widely among the schools. This was attended by scholars from all the Council Schools, and at least 14 cases scattered over the town a fortnight later were traced to this one function. School tea parties during the Christmas holidays further helped to widen the range of infection, so that in the early weeks of 1908, a fair proportion of the schools had some cases.

The special danger in Measles is the strong power of infection existing in a patient two or even three days before the rash appears, so that a child may be present in school looking apparently quite well, or with, perhaps, signs of a slight cold in the head, and may yet be in a virulently infectious condition. Fifty-four imported cases occurred during the year. There were as usual a large number of extension cases, several members of the same family being affected in turn; the 309 cases occurred in only 234 houses.

Rate of Mortality from Measles :—

Years.	1891 to 1895	1896 to 1900	1901 to 1905	1906	1907			
					England & Wales.	76 Great Towns.	142 Smaller Towns.	Blackpool.
Death rate per 1000	0·17	0·22	0·13	0·12	0·36	0·43	0·41	0·02

Of the 309 cases, 1 died, giving a case mortality of 0.32 per cent., which is lower than in 1906. The death-rate per 1,000 inhabitants was 0.02—a very striking contrast with the figure for England and Wales, which was 0.36 for 1907, eighteen times as high, showing the advantage of the Blackpool plan of notification and oversight of this disease.

This aspect of the question is dealt with in greater detail in the appended statement on the administrative control of Measles and Whooping Cough.

Twenty-five cases of measles were admitted to the Sanatorium during the year, a large proportion being cases in visitors to the town. All the cases treated in hospital recovered.

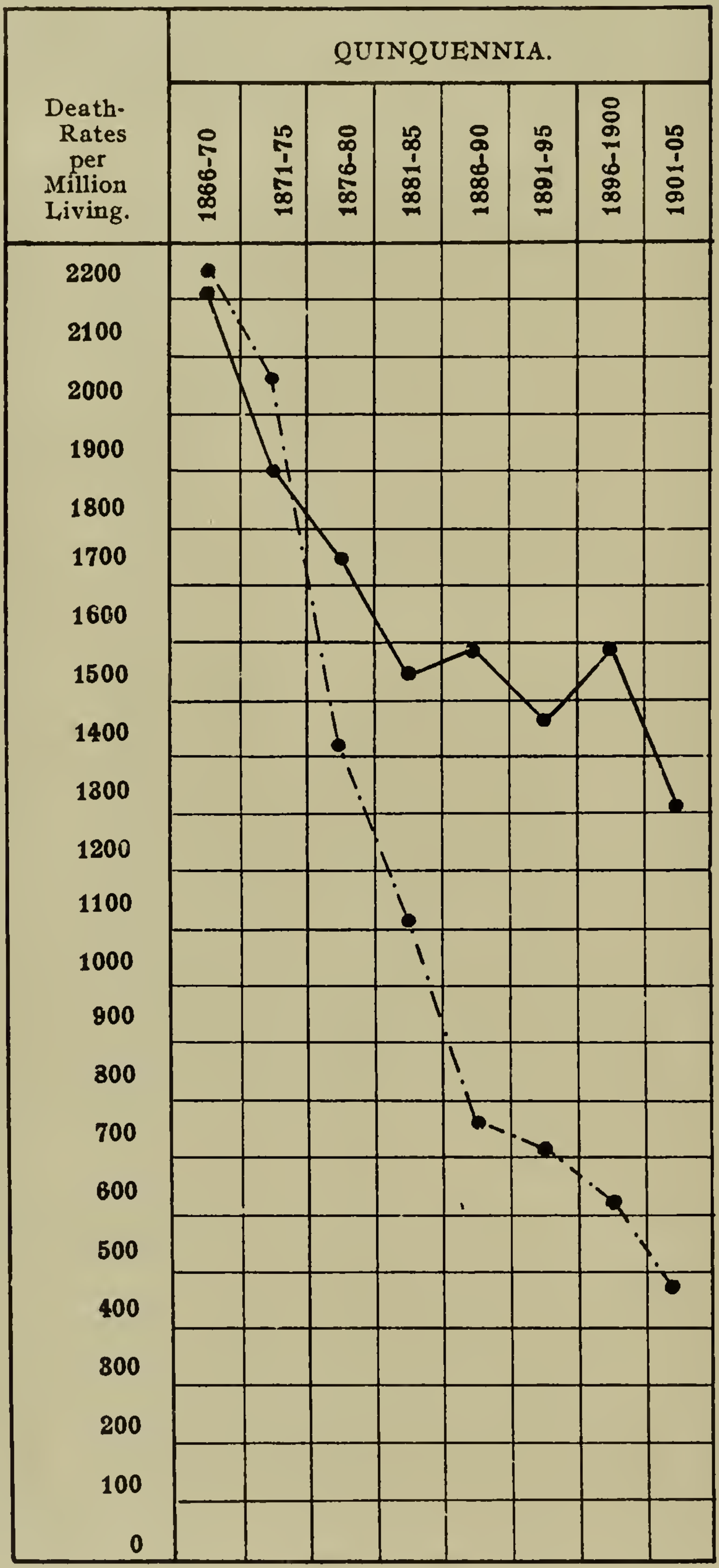
ADMINISTRATIVE CONTROL OF MEASLES AND WHOOPING COUGH.

Notwithstanding the fact that many Medical Officers of Health have been for some years back calling attention to the great sacrifice of child life, due to Measles and Whooping Cough, and although many thoughtful Sanatarians have recognised the great importance of these diseases, the great mass of the general public, and even, I am afraid, some medical men, still look upon these diseases as trivial ailments not requiring serious attention, and not important from the standpoint of the Public Health, and we still too often hear the light phrase "Oh! it's only Measles!" Yet in 1906, 9,444 deaths were registered in England and Wales from Measles alone—a number nearly equal to all the deaths from Scarlet Fever and Diphtheria combined, and nearly three times as many as all the deaths from Typhoid Fever in the same period. Other years show similar figures.

Whooping Cough is also a very large contributor to the mortality statistics. In 1906 there were 8,313 deaths in England and Wales from this one cause, and this figure was lower by over 3,000 than the average for the preceding 10 years.

When we consider the very serious interference with school attendance due to Measles and Whooping Cough, and the consequent great diminution of educational efficiency, the subject assumes importance from this aspect also. That grave difficulties present themselves in dealing adequately with these diseases from an administrative point of view I freely admit, but are we doing all that is possible? In my opinion, we are not.

DEATH-RATES in England and Wales from Two Classes of the principal Zymotics, 1866-1905.



In the above chart the dotted line shows the curve of the death-rate from the four principal Zymotic diseases which are compulsorily notifiable, viz.:—**Smallpox, Scarlet Fever, Typhoid Fever** and **Diphtheria.**

The continuous line shows the curve of the death-rate from the three principal Zymotic diseases **not** compulsorily notifiable, viz.:—**Measles, Whooping Cough** and **Diarrhœa.**

The following table and the diagram which I have prepared to accompany it afford serious food for reflection.

Death-rates per million persons living in England and Wales :—

Quinquennium.	From Smallpox, Scarlet Fever, Typhus, Continued Fever, Typhoid Fever, Diphtheria, and Croup combined	From Measles, Whooping Cough, and Diarrhœa combined.
1866–1870	2249	2209
1871–1875	2070	1903
1876–1880	1415	1765
1881–1885	1106	1544
1886–1890	752	1593
1891–1895	710	1457
1896–1900	628	1598
1901–1905	489	1304

The figures are very striking, and the diagram makes the contrast still more evident by giving an ocular demonstration of the comparison.

I have prepared from the figures presented in the Annual Report of the Registrar-General the death-rates from two classes of zymotic diseases, both classes being included in the so-called " seven principal zymotic diseases," *viz.* : Small-pox, Scarlet Fever, Diphtheria, Fever (including Typhoid, Typhus, and Continued fever), Measles, Whooping Cough, and Diarrhœa.

The first four have been universally compulsorily notifiable since 1899, and, as a matter of fact, in nearly all districts of large population, have been notifiable since 1889, or earlier.

In the 1st column I give the death-rate per million in England and Wales for each quinquennium since 1866, for the diseases which are compulsorily notifiable, and which have through notification come directly under the observation of the Health Officers in Urban and Rural districts.

In the second column I give the death-rates per million from Measles, Whooping Cough, and Diarrhœa combined, that is, the three principal zymotic diseases not compulsorily notifiable.

The Public Health Act was passed in 1875, and just before and just after the passing of that Act, there was a great change in public opinion and in public action leading to measures for the improvement of sanitary conditions. Also Sections 120 *et seq.* of the 1875 Act, for the prevention of the spread of infection from infectious diseases, and forbidding under penalty the exposure of infected persons or goods led to a diminution in "dangerous infectious diseases." Observe the remarkable fall in death-rates between the quinquennium 1871-75, and 1876-80.

In 1877, I believe that only Huddersfield and Bolton had compulsory notification of infectious diseases. By 1879 an increasing number of towns, and among them Blackpool, had obtained similar powers, and by 1886 many towns had followed the example, so that as a matter of fact notification had been in force for a very considerable population before the general Act of 1889 gave the opportunity to all sanitary authorities to adopt compulsory notification without the expense of promoting a Local Act. By the quinquennium 1886-90 the death-rate from the first class of diseases had dropped to 752 from 2070 in the quinquennium including the year 1875, and the decrease has been progressive down to 489 in the last completed quinquennium. But look at the diseases of the second class—Measles, Whooping Cough, and Diarrhœa. It is true that improved sanitation, &c., following the 1875 Act, seems to have led to a decrease in the death-rates from these diseases during the next two quinquennia, but the drop was much less than in the case of the "notifiable" diseases, and the death-rate remained practically stationary since the quinquennium 1881-1885, until the last quinquennium, when there was a more decided drop, probably due to greater interest being taken in these diseases, and especially the attention given to infantile Mortality and Zymotic Diarrhœa.

Of course I do not for one moment suggest that I have taken into account all the influences that have been at work, but I do consider that we have here a statistical fact of the very highest importance and one that is extremely suggestive. There is, it seems to me, some *prima facie* evidence that notification *and the administrative action taken in consequence thereof*, have led to a reduction in the death-rates from certain diseases, and that as great a reduction has not taken place in the death-rates of other zymotic diseases not compulsorily notifiable.

Blackpool is one of the few places in England and Wales where notification of Measles has been in force continuously over a lengthened period. In 1879 Blackpool obtained by Local Act the power to enforce notification of the following Infectious Diseases :—Small-pox, Infectious Cholera, Measles, Diphtheria, Typhus, Typhoid, Scarlet, Relapsing and Puerperal Fevers. Notification was obligatory on householder and medical attendant alike. We have had, therefore, experience of Measles notification for 28 years, probably a longer period than any other town in the kingdom.

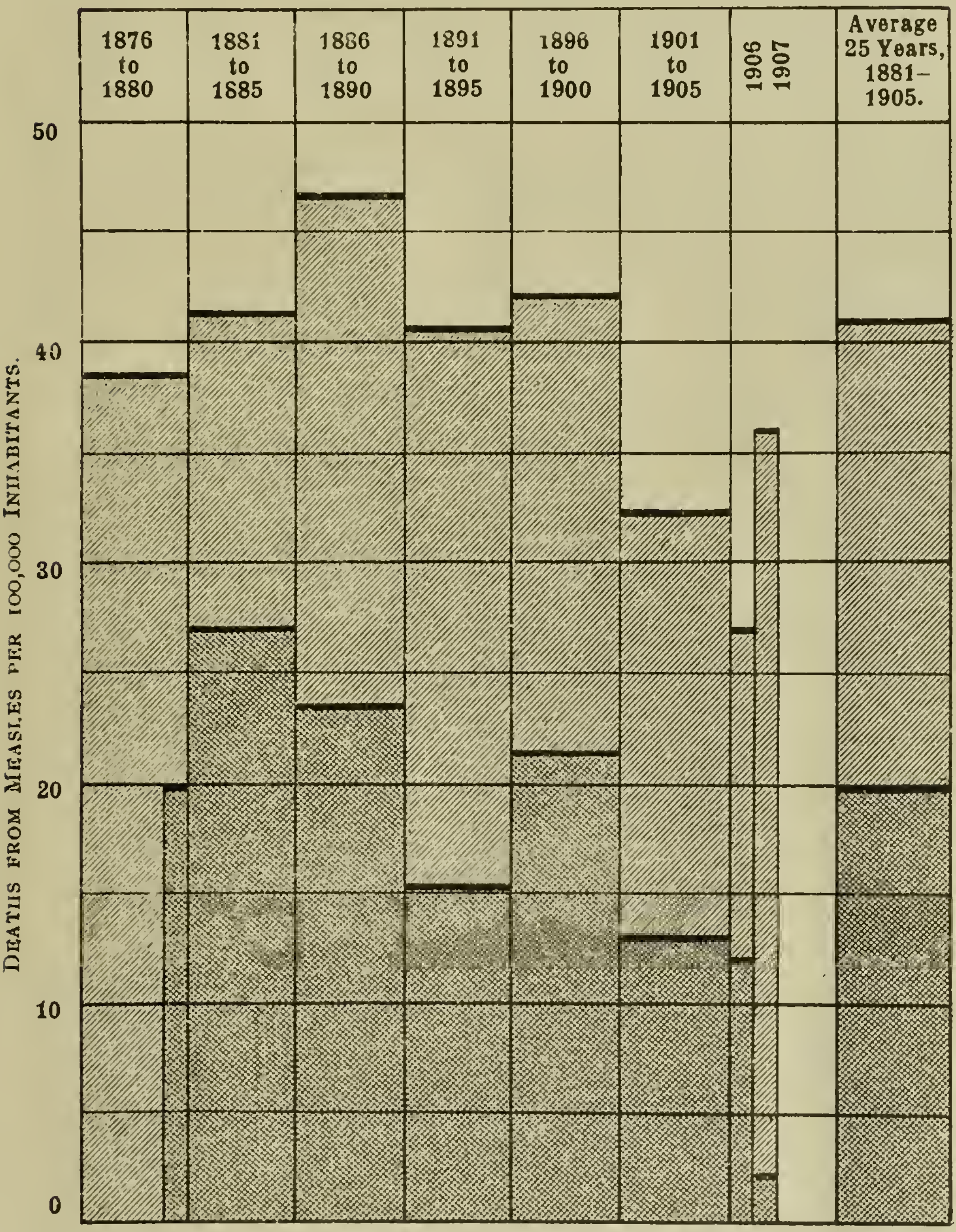
The following table of comparison will perhaps be of interest.

Death-rate per 100,000 living from Measles :—

Quinquennium.	England and Wales.	Blackpool.
1876–80	38.5	20 (1880 only
1881–85	41.3	27
1886–90	46.8	23.5
1891–95	40.7	15.3
1896–1900	42.1	21.3
1901–1905	32.1	13.0
Single years.		
1906..............................	27.0	12.0
1907..............................	36.0	2.0
25 years—1881–1905	41.0	20.0

The diagram I have prepared shows the same thing in a different way. There is no doubt that Blackpool has suffered much less by deaths from Measles than the average of England and Wales, the proportion of deaths being less than half.

DEATH-RATE from MEASLES per 100,000 Living, ENGLAND AND WALES (single shading) Compared with BLACKPOOL (cross shading).



As Blackpool was only incorporated in January, 1876, I have unfortunately no reliable figures for the death-rates in the area comprising the present Borough before 1879, so that I cannot compare the death-rate before and after the enforcement of notification, but this is perhaps of less consequence from the fact that the increase of population has been so enormous that the rates referring to a very small population might not be very fairly compared to those of the much greater populations of recent years. One would expect, however, that the death rate would be likely to go up with a change from a small town to a County Borough.

During the ten years 1891-1900 the death-rate from Measles for the whole of Lancashire was 58.5 per 100,000, whilst the Blackpool death-rate for the same period was only 16.7 per 100,000, *i.e.*, Blackpool had proportionately considerable less than 1/3rd of Measles deaths compared to the whole of the County of which it forms a part. The nearest large town—Preston—had a death-rate during the same period of 69.6 per 100,000. Dr. Willoughby in his book puts the "permissible mortality" as 40 per 100,000, so that Blackpool's mean death-rate for 25 years is only half the "permissible." A portion of this superiority may be attributed to our healthy climate. But, on the other hand, the winds of Blackpool are not altogether favourable to the lung complications frequent in Measles, and we have a very considerable proportion of the poor and ignorant classes amongst our population. Another point is this that the death-rate from Scarlet Fever, and other diseases generally notifiable, is not markedly less in Blackpool than in England and Wales as a whole; this is readily understood when one considers the enormous risks of importation of infectious disease in a popular resort to which hundreds of thousands of the working classes of Lancashire come every year. With a disease like Measles, strongly infectious before the appearance of the rash, this risk is not less than in the case of Scarlet Fever, but much greater, yet our death-rate from Measles is practically only half that of England and Wales. Does it not appear then that notification (and the measures taken in consequence thereof) has decidedly lessened the death-rate from Measles in Blackpool ?

One would expect that greater experience in dealing with Measles would lead to a reduction in deaths. I have worked out the case mortality of Measles in Blackpool for three periods, two of ten years each, and one of eight years, and you will observe the marked improvement in case mortality, and this in spite of a more dense population of the town.

Case mortality of notified or discovered cases of Measles in Blackpool :—

Ten years—1880–1889	3·7%
Ten years—1890–1899	2.9%
Eight years–1900-1907	0.94%

I am quite willing to admit that part of this apparent improvement is probably due to the fact that as years have gone on, with notification in force, the inhabitants have become more generally aware of the necessity for notifying cases, and the Health Officials have probably shown greater vigilance, so that possibly a larger percentage of the actual cases have become known in the later years. On the other hand, the rapid increase in population with the influx of people from towns where they have not been accustomed to the notification of Measles tends to neutralize the first point.

As regards case mortality in the country generally one can say little. The statements in books vary; one book puts Measles mortality as 10 to 12 % of the cases, whilst another puts it at 1 to 2 %, another says that in some epidemics it may be much greater even up to 20-30 %. Whitelegge says it is rarely over 5 % in this country and often between 1-2 %. Dr. Matthew Hay found in Aberdeen under notification a fall in case mortality from 4.2 % in 1882-1891 to 2.7 % during 1892-1901.

Personally I am of opinion that notification of Measles has been of service in Blackpool in reducing the death-rate, by giving an opportunity to the Officials of the Health Department to see to the sanitary conditions of the patients' home, and especially by impressing on the parents the necessity for care of the patient and for isolation.

It is somewhat doubtful whether notification is of much use in leading to a reduction of the *number* of Measles cases. We have no means of comparing the proportion of Measles here to that in other towns where the disease is not notifiable. I think that by adopting the system of closing infants' departments for a short period on the occurrence of the first case of Measles in a school something could be done with great effect in this direction.

With regard to Whooping Cough this disease is not notifiable in Blackpool. We get to know of a certain proportion of the cases, and these are visited and the usual precautions taken. Owing to our learning of only a small proportion of the cases I am unable to say whether there has been any reduction in the case mortality from this disease corresponding to that in Measles. The mortality in different years varies very widely.

In my Annual Report for 1903 I gave a summary of information obtained from enquiries in various towns as to the notification of this disease. Very few places have adopted notification, and it is obvious that the prolonged infectivity, and the uncertainty as to the cessation, make it a very difficult disease to deal with.

Compulsory notification would give a more complete knowledge of the cases occurring, and would allow of the enforcement of the penal clauses of the 1875 Act as to exposure of infected persons. This would tend to prevent the too frequent custom of sending Whooping Cough cases in the infectious stage to seaside health resorts to convalesce.

It is obvious that more should be done than is being done at present to decrease the loss of life through Measles and Whooping Cough, and I cannot resist the conclusion that *the only satisfactory basis of administrative control is a system of compulsory notification.*

The difficulty as to its general adoption is the question of expense, which may be very considerable in case of an epidemic. Unfortunately the 1899 Act, by repealing provisions of local Acts, has, in several towns, interfered with very successful arrangements to save expense in notification.

In Blackpool under the 1879 local Act, the first case of Measles only in a house was notifiable by the medical man attending, and a fee of 2s. 6d. was allowed, but no further fee was paid for fresh cases occurring in the same house within 30 days of the first.

I see no reason why this plan should not be made legally possible, the medical man being required to notify the first case only in a family, but the householder being required to notify every case. In any event, the officials of the Health Department having information as to the first case can keep the house under observation.

Of course, there is no virtue in notification by itself, although it undoubtedly leads the public to take the disease more seriously. Notification is of value in enabling the Health authorities to take further steps. These should include :—

(1) Visit of inspector to make enquiries.

(2) Issue of information to the parent or householder of the dangers of the disease, the necessity for isolation, and the precautions to be taken.

(3) Notice to school authorities to exclude the patient and all living in the same house from school.

(4) Disinfection of library books and other possibly infected articles.

(5) The prevention of the carrying on of any trade or business in the infected house without due precautions to prevent spread of infection.

(6) In severe cases, or where proper attention is not available, Hospital Isolation and treatment.

(7) Disinfection of the infected house at the end of the case,

Our success in the administrative control of Measles and Whooping Cough, as of other infectious diseases must ultimately rest on an enlightened public opinion, under which parents will realise the seriousness of these diseases, the importance of preventing the spread of infection, and their responsibility in assisting the Health authorities in all the steps necessary to attain that object.

My experience of Measles in Blackpool has led me to various conclusions which do not agree with the opinions usually expressed by medical men as to this disease.

One is often asked what is the necessity for excluding from school those inmates of an infected house who have already had Measles, the idea being that (1) in such cases the possibility of a second attack is negligible, and (2) there is no danger of infection being carried by contacts to susceptible persons elsewhere. My experience most definitely contradicts both these assumptions. In many cases we have had children down with a second attack of Measles, in one instance the interval between the two attacks being less than 18 months.

From the nature of the case it is rather difficult to prove conclusively that Measles may be carried by contacts, but I have had a few cases in which the most patient investigation could not reveal any possible source of infection by direct contact with Measles patients, and the infection must have been conveyed indirectly. For instance a child isolated for four weeks in a room at home, with extremely few visitors, none of whom had had Measles recently, developed the disease, and a similar case occurred in a child in Hospital. In both these cases there must have been either indirect infection or a very prolonged latency.

SCARLET FEVER.

During 1907, 177 cases of Scarlet Fever were notified, as compared with 183 in 1906, and 200 in 1905; this is the smallest number for any year since 1899.

Of the 177 cases only 4 died, giving a case mortality of only 2.26 per 100 cases, and the extremely low death-rate of 0.07 per 1,000 inhabitants. Strictly speaking one of these deaths was not due to Scarlet Fever; the boy died of Bright's Disease five months after being in the Sanatorium, and the kidney trouble which caused his death had commenced before he was admitted to the Sanatorium.

Of the other three cases two had a very severe type of Scarlet Fever, one dying within five days after admission to Hospital, and the other was a boy who, unfortunately, caught Scarlet Fever whilst his heart was still very weak after an attack of Diphtheria. He died on the fourth day after removal to the Sanatorium.

Rates of mortality from Scarlet Fever :—

YEARS.	Blackpool.				1907			
	1891 to 1895	1896 to 1900	1901 to 1905	1906	England & Wales	76 Great Towns	142 Smaller Towns	Blackpool
Death rate per 1,000	0·23	0·15	0·17	0·05	0·09	0·12	0·08	0·07

Chart IV. shows in a graphic manner the fluctuations in the disease during the year. Commencing with 11 cases in January, and 4 in February, there was a fall to 1 in April, July and August had 10 and 11, then a jump to 19 in September, 26 in October, 45 in November, and 40 in December.

The 177 cases occurred in 156 different houses, frequently two, three, or more children being attacked. This was especially so when the first case had been overlooked, and had remained at home, and shows how valuable the Isolation Hospital is in limiting the spread of this disease.

As regards Wards, Foxhall and Talbot had the largest number of cases, namely 50 and 39; Claremont had 32; Waterloo, 27; and Brunswick, 22.

The source of infection in some of the cases was often very difficult to trace at the time, although frequently some light was thrown on the subject by the discovery of peeling cases later on. Several cases were discovered in the desquamation stage, and there was abundant evidence that they had materially helped to spread the disease. In all cases the parents denied any knowledge of what was the matter with the child, although the association of peeling with Scarlet Fever must be very well known to most people.

In one case the child in an infectious condition was taken by tram to the house of a relative at North Shore. One of the children in this house took Scarlet Fever, and at the time we could not account for it, but it was obviously due to direct infection from the cousin. Probably the tram ride would explain some of our other mysterious cases.

Thirteen cases were pretty clearly instances of imported infection, either in visitors or in Blackpool residents who had been in other districts.

Some instances of indirect infection were observed. A woman visited a house where a case of Scarlet Fever was being nursed at home. She states that she did not enter the sick-room. A week later her own boy commenced with Scarlet Fever. A servant went to her home in a distant town, and after her return a child in the house here developed Scarlet Fever. On enquiry we learned that the girl's two brothers were " ill " when she returned here, but she did not know the nature of the illness. A letter to the Medical Officer of Health caused him to visit the house, when he found these boys suffering from Scarlet Fever, which had never been reported.

In one instance some children came here immediately after an attack of Scarlet Fever, during which they had been nursed at home in a large Lancashire town. They left some toys behind them, and a child in the house playing with these a month later developed Scarlet Fever.

The crowding together of children at the cheap cinematograph entertainments, which have been so frequent in Blackpool lately, seemed undoubtedly responsible for spread of Scarlet Fever at one period, and there was some evidence that the place itself or some of the furniture had become infected, for a rigorous disinfection appeared to bring the series of cases to a stop.

I regret to say that the Resident Medical Officer, one of the Nurses, and one of the servants at the Sanatorium contracted Scarlet Fever during the year, but there were no cases which could be attributed to ærial convection from the Hospital to houses in the vicinity.

Close enquiries have been made into all cases where there was a possibility of return cases. In eight instances there was some reason to think this origin was possible, but in some of these other sources were equally probable.

Of the 177 cases of Scarlet Fever notified, 162 were removed to the Infectious Diseases Hospital, or 91.53 per cent., which is an extremely large proportion, and shows the confidence which the public have in the administration of the Hospital, and their appreciation of the care and attention given to the patients. Many persons have warmly expressed their complete satisfaction, and shown their gratitude for benefits received by relatives under treatment there.

Hospital isolation is a great advantage from the public health point of view, as there is no doubt that home isolation is in many cases absolutely futile. In many houses it is impracticable, and even in more favourable cases, beginning with the best intentions, the residents of the house grow careless before the long period of isolation is over. Again, for the sake of the patients the Sanatorium is more satisfactory, as they can, in favourable weather, get open-air exercise, instead of being cooped up in one room for six weeks.

The day-room in the new block is also a great acquisition, as it allows convalescent children to be away from the Wards in the day-time. The change is an advantage to themselves, and at the same time ensures more quiet and purer air in the wards for the acute cases.

Another great advantage of the recent extensions is the possession of small isolation wards, into which doubtful cases may be admitted. These have been of great service during the year.

DIPHTHERIA.

During 1907, 84 cases were notified as suffering from Diphtheria, 31 more than in 1906, and 36 more than in 1905, but still far below the high figures of 1901.

The increase was chiefly due to an outbreak of a virulent type of disease in connection with the children of the Thames Road School in the early part of the year. The infection persisted for some months, fresh cases cropping up when the outbreak seemed at an end.

Seventeen cases were reported in February, and 13 in March—half the cases occurring in the first four months of the year.

Rate of Mortality for Diphtheria :—

Years	Blackpool.				1907			
	1891 to 1895	1896 to 1900	1901 to 1905	1906	England & Wales	76 Great Towns	142 Smaller Towns	Blackpool
Death rate per 1,000	0·11	0·08	0·32	0·21	0·16	0·17	0·15	0·17

Of the 84 cases, 10 died, giving a case mortality of 11.90 per cent., as against 22.22 in 1906. This great reduction in case mortality is to be attributed, I believe, to the fact that a much larger proportion than ever before were able to be taken into Hospital. The death-rate per 1,000 of the entire population was 0.17, as compared with 0.21 in 1906. This rate is slightly higher than the average for England and Wales.

Of the 51 cases admitted to the Sanatorium 5 died, giving a case mortality for Hospital-treated cases of 9.8 per cent. This is certainly a very good record, and shows that Hospital isolation is not only of value as a protection for the public, but is also a decided advantage for the patient. There is no doubt that in many homes it is quite impossible for the careful and skilled nursing to be given, which is of such vital importance in cases of this disease.

I have previously pointed out the difficulty frequently experienced in tracing the source of sporadic cases of Diphtheria, but when an outbreak occurs in a somewhat limited area the problem is distinctly simplified. The spring outbreak was undoubtedly kept up by school infection, but a close study of the cases made it certain that infection in a large number of instances was not conveyed directly from a child suffering from clinical diphtheria, but that to a very large extent, the persistence and severity of the outbreak was due to infection by " carrier " cases not themselves suffering from Diphtheria.

Early in February, owing to a sequence of cases associated with Thames Road Council School, I visited the school and personally examined the throats of all the children in the classes affected, and I visited the absentees who had no doctor in attendance. I learned that a large number of the children had complained of sore throat. I took swabs from the throats of 12 of the children, and although in none of these cases was there the slightest clinical evidence of Diphtheria, yet the Diphtheria germ was found present in five cases. In two of these the disease developed afterwards. All these five children were potential carriers of the disease.

Another example illustrating the same point occurred later in the year. A father, mother, and two children suffered from Diphtheria, and were removed to the Sanatorium. The house and clothing were thoroughly disinfected and for over a fortnight the two other children lived there, being looked after by their grandmother. At the end of that time, as they were still perfectly well, the grandmother was allowed to take them to her home in another town. Within a fortnight two children with whom they had come in contact there developed Diphtheria. I was informed by the Medical Officer of Health that there seemed no other source of infection but the two children who had come from Blackpool.

The persistence of living and virulent Diphtheria bacilli, not only on the throats of apparently healthy persons, but also on the throats of patients recovering from Diphtheria, renders it important to take every precaution before ceasing the isolation of a patient. I consider it is desirable to keep up isolation until the throat is clear, and a swab gives a definitely negative result. Many medical men appear to think a fortnight long enough to isolate a Diphtheria patient, but my experience is that the germ has rarely disappeared before the end of the third week, and that it is never safe to relax strict precautions until at least four weeks have elapsed from the onset.

Careful investigation of the cases reveals once more what a remarkably large proportion of our cases occurred in houses situated on clay soil, no fewer than 42 being on clay, 14 on peat, and 28 on sand or peaty sand.

This year the south end of the town has suffered more than usual owing to the school outbreak already referred to. Forty-four cases occurred in the southern part of the town, 19 in the central, and 21 in the northern section.

In a comparatively few cases sanitary defects were noticed on surface inspection. In one case there was a pail-closet, and the yard was defective ; in another there was no proper ash receptacle, and the drains were obviously leaky.

In 25 cases the back street was not formed, and in 7 others the front street also was unformed.

In two instances there was a certain amount of suspicion that domestic animals might have had something to do with the causation of the disease. In one case the patient was stated to have fondled a stray cat, and in another the cat was said to have been ill, with a cough.

Three cases were almost certainly imported.

In several cases the disease was attributed to the recent dredging of a sewer, and in another case a sewer manhole near was complained of, offensive smells being observed from it.

During 1907 the arrangement with Professor Delépine, for examinations of specimens taken from the throats of suspected cases of Diphtheria was taken advantage of very largely, and has proved again an extremely valuable aid to diagnosis. Altogether 222 specimens were sent for examination. The reports stated that 54 of these were positive, 142 negative, 14 showed suspicious bacilli, 1 atypical bacilli, 11 showed no growth. It is to be remembered that many of these negative specimens were those taken at the end of the case to ensure that the patient was not likely to carry infection.

Of the cases notified as Diphtheria either before or after the bacteriological examination, swabs were examined from 76 cases. In 45, Diphtheria bacilli were found to be present ; in 7 either a few Diphtheria bacilli only, or suspicious bacilli were found. In 22 they were not found ; in 2 cases no growth occurred from the swab. In 8 cases no specimen was taken.

Of the 22 cases which gave a negative result bacteriologically, some were almost certainly true Diphtheria, but in a few cases there was an element of doubt as to the diagnosis.

The facilities granted by the Council for the free supply of Antitoxin have been taken advantage of to a considerable extent, 169 doses of 2,000 units each having been supplied during the year. I would again repeat my opinion that it is very desirable to use this valuable remedy at as early a stage as possible, and to use it in all doubtful cases without awaiting the result of the bacteriological examination of the throat swab. I also think it would be advisable to administer prophylactic doses of 500 or 1,000 units to all members of a household who have been exposed to infection. I may add that in not a single instance has any untoward result from the injection of antitoxin come under my notice, further than the appearance of an antitoxin rash in a few cases without any other symptoms.

It is perhaps worth adding that there is considerable evidence that antitoxin exerts its good effect even if taken by the mouth, although its action is probably delayed. Whilst, personally, considering it wisest to give it hypodermically to all persons actually suffering from Diphtheria, administration by the mouth might be a simpler means of giving it as a prophylactic and less likely to lead to objections on the part of contacts.

ENTERIC FEVER.

Table XV. gives the number of cases of Typhoid Fever notified in each month of the year. Chart IV. shows the same thing by the graphic method, whilst in Chart III. the cases are placed according to the weeks in which they occurred.

The total number of cases reported was 41. Four of these occurred in January, 6 in February, 2 each in March and June, 3 each in May, July, and September, 1 in August, 4 in October, 8 in November, 5 in December. No cases were reported in April.

Of the 41 cases, 9 died, but I have included 1 death outside the Borough, making a total of 10, giving a case mortality of 24.39 per cent., and a death-rate of 0.17 per 1,000 inhabitants; this rate although lower than the average since 1891 is considerably higher than the general rate for England and Wales.

Rate of Mortality from Enteric Fever :—

YEARS.	1891 to 1895	1896 to 1900	1901 to 1905	1906	1907			
					England & Wales	76 Great Towns	142 Smaller Towns	Blackpool
Death rate per 1,000	0·22	0·38	0·21	0·12	0·07	0·07	0·07	0·17

I subjoin an epitome of the 41 cases notified during the year. It is arranged chiefly with the view of throwing light on the causation of the disease.

Epitomé of Cases Noted as Enteric Fever during 1907.

No.	Age.	Sex	OCCUPATION.	STREET.	*Widal's Reaction.	Recovered or dead.	Removed to Hospital	SANITARY CONDITION OF HOUSE, &c.	REMARKS.
1	9	F	School	Exchange Street...	+	R	Yes	Drains leaky ; yard w.c. leaky ; puddle joints ; yard surface defective	Direct infection from case 39, 1906
2	31	F	Housework	Lewtas Street	+	D	Yes	Drains satisfactory	Direct infection from case 36 or 39, 1906 ; mother of Case 39
3	41	M	Insurance agent	Wyre Grove.........	—	D	Yes	Drains satisfactory	Probably not Enteric, but Cirrhosis of Liver ; ill for several months
4	6	F	School	Market Street	+	R	Yes	Drains satisfactory	Direct infection ; mother Case 2, or Brother, Case 39, 1906
5	32	M	Labourer	Fisher Street	+	R	Yes	Soil pipe leaky ; floors damp	Mussels and cockles a fortnight before onset
6	39	M	Stationer	Waterloo Road .	+	R	Yes	Slight leak in drain	Mussels
7	9	F	School	Layton Lane	+	R	Yes	Drains satisfactory	Cockles 10 days or more before onset
8	16	F	Confectioner	Fairfield Road......	—	D	No	Slight leaks in drain	No cause found ; Widal reaction negative
9	32	F	Housework	Cocker Street	+	R	Yes	Drains satisfactory	Oysters ; date of onset doubtful
10	46	M	Gentleman	Wellington Road .	+	R	No	Drains leaky and defective puddle joints	Mussels and cockles 14 days before onset

Enteric Epitome—(*continued*).

No.	Age.	Sex	OCCUPATION.	STREET.	* Widal's Reaction.	Recovered or dead.	Removed to Hospital	SANITARY CONDITION OF HOUSE, &c.	REMARKS.
11	6	F	None	Cocker Street	not taken	R	Yes	Drains satisfactory	Direct infection from mother ; Case 9
12	33	M	Pork Butcher	Belmont Avenue...	+	R	Yes	Drains leaky, puddle joints, yard surface bad	Oysters 11 days before onset
13	40	F	Housework	Raikes Parade......	+	D	No	Slight leaks in drain	Direct infection from daughter who died of Enteric in another town
14	30	F	Housework	Coop Street	+	D	No	Drains leaky, puddle joints	Direct infection from nephew, who had Enteric Fever in another town for 13 weeks
15	10	F	School	Ribble Road	+	R	Yes	Drains leaky; puddle joints, yard surface defective	No source ascertained
16	5	M	School	Waterloo Road ...	+	R	No		Had ice cream frequently
17	48	F	None	Pleasant Grove ...	+	R	Yes	Drains satisfactory	Cockles were in the house about 14 days before onset; patient had none, but may have handled them
18	21	F	Domestic servant	Osborne road	+	D	Yes	6 foot low vent under front bedroom windows ; drains blocked ; S.P. too low and near bedroom of Case 18	Possibly infection from sewer in Case 18, and direct infection in Case 19
19	25	F	Housework	Osborne Road	+	R	No		

Typhoid Epitomé—(*continued*).

No.	Age.	Sex	OCCUPATION.	STREET.	*Widal's Reaction.	Recovered or dead.	Removed to Hospital	SANITARY CONDITION OF HOUSE, &c.	REMARKS.
20	41	F	Housework	Lord Street	—	R	Yes	Slight leaks in drain	Almost certainly not E.F., but alcoholic gastritis
21	19	M	Watchmaker ...	Ashton Road	not taken	R	Yes	Drains leaky, puddle joints, yard surface defective	Cockles about 16 or 17 days before onset ; also oysters
22	10	F	School	Ash Street	+	R	Yes	Slight leak in drain	No cause ascertained
23	5	M	School	Highfield Road ...	—	R	No	Drains satisfactory	No cause ascertained ; same vicinity as Case 22
24	54	F	None	Erdington Road .	+	D	Yes	Slight leak in drain	No information obtainable
25	17	M	Electric engineer	Victoria Terrace .	—	R	No	Drains satisfactory	Shrimps about 14 days before onset
26	40	M	Hotel porter	Boothley Road ...	±	R	No	Slight leaks in drain	No cause ascertained.
27	35	M	Carter	Bk. Clifton Street .	+	R	No	Drains satisfactory	Raw mussels about 19 days before onset
28	46	F	Housework	West Street	+	R	No	Drains leaky and soil pipe leaky	Mussels about 14 days before onset ; oysters
29	16	F	Housework	Belmont Avenue...	+	R	Yes	Drains satisfactory	No cause ascertained
30	3	M	None	Hyde Road	±	R	Yes	Drains satisfactory	May have had cockles or handled mussels

Typhoid Epitome—(*continued*).

No.	Age.	Sex	OCCUPATION.	STREET.	*Widal's Reaction.	Recovered or dead.	Removed toHospital	SANITARY CONDITION OF HOUSE, &c.	REMARKS.
31	42	F	Housework	George Street	+	R	No	Strong smell of sewer gas in yard w.c.; drains leaky and defective; puddle joints; yard surface defective	? Sewer infection
32	17	M	None	Promenade	+	R	Yes	Slight leaks in drain	*Imported*. Infection on steamer in Meditteranean, or travelling through France.
33	22	M	Tailor	Palatine Road	+	D	No	Drains leaky	Mussels about 2 or 3 weeks before onset
34	8	F	School	Layton Lane	+	R	Yes	Drains satisfactory	No cause ascertained
35	36	M	Auctioneer's ... Assistant	Crossland Road....	+	D	Yes	Slight leaks in drain	Mussels about 14 or 15 days before onset
36	15	M	None	Tyldesley Road ...	+	R	Yes	Slight leaks in drain	Cockles about 14 days before onset
37	5	F	None	Ibbison Street	+	R	Yes	Insanitary house; drains leaky, and defective; puddle joints	*Imported*
38	5	F	None	Gipsy Camp, Sand Hills	+	R	Yes		
39	9½	M	School	Woolman Road....	not taken	R	No	Slight leaks in drain	Cockles a few days before onset
40	22	M	Tailor	Dickson Road ...	+ incomplete	R	Yes	Drains satisfactory	Cockles frequently; mussels about 12 days before onset
41	55	F	Housework	Woodland Grove .	+ incomplete	R	Yes		Cockles frequently

In eight cases the disease was fairly definitely attributable to direct infection from previous cases with whom the patients had been in contact either in Blackpool or elsewhere. (Cases, 1, 2, 4, 11, 13, 14, 19, 20). It is probable that perhaps too little stress has been placed on this factor of recent years.

In eight cases either Mussels or Mussels and Cockles had been taken or handled some time before the onset of the disease. In one case the mussels were eaten raw. In 7 cases cockles were the probable source of infection ; in case 17 the patient is supposed not to have eaten any of the cockles, but may have handled them. In two cases some suspicion was thrown on oysters as the source of the disease. In another case shrimps were suspected, in 2 cases there was strong grounds for attributing the disease to sewer infection, whilst in one an insanitary house had possibly some connection.

Case No. 3 was almost certainly not Enteric Fever, but cirrhosis of the liver, whilst case 20 was a case of alcoholic gastritis ; case 30 was somewhat doubtful.

Twenty-seven out of the 41 cases were treated in Hospital, or 65.85 per cent., against 71.8 per cent. in 1906, which was the highest percentage recorded.

WIDAL REACTION.

This method has once more proved its great value as an aid to diagnosis, particularly in giving certainty in mild obscure types of the disease, showing few or none of the typical symptoms of enteric fever.

In 38 out of the 41 notified cases specimens of blood were taken. Thirty-one of the 38 cases gave a positive result ; two gave doubtful reactions ; five were negative. In three cases no specimen was taken.

Altogether 79 specimens were sent to Professor Delépine for bacteriological diagnosis. Thirty-four were reported as positive or incomplete, 5 as doubtful, and 40 as negative.

ERYSIPELAS.

Thirteen cases of this disease were notified during 1907, as compared with 18 in 1906, 17 in 1905, 26 in 1904, and 19 in 1903.

Of all the żymotic diseases this is the one in which notification is of the least service, as since the practically complete elimination of surgical erysipelas, the rapid and extensive spread of this disease is almost unknown ; it is very rarely that one can get any evidence of direct connection between one case and another, and it is only very occasionally that the nature of the disease seems to present much likelihood of danger of infection from the patient to other persons, even those coming into close contact with him.

Two cases occurred in January, 3 in February, one in May, one in July, one in August, two in September, one in November, two in December.

There were no deaths, and every case occurred in a different house; there was no evidence of any connection of one case with another.

In no fewer than 10 cases the face or some part of the head was implicated, and in the other cases the leg. In only five cases was there any history of a scratch, wound, or breach of continuity of the skin surface, which might serve as a point of entrance for the bacterial cause of the disease, although two others seemed to be associated with bad teeth.

None of the cases required removal to the Sanatorium, as all could be satisfactorily attended to at home.

PUERPERAL FEVER.

Only two cases of this disease were reported during the year, both in September. Both cases recovered.

Both were attended by the same midwife, and there is some reason to believe that a dirty Higginson's syringe may have conveyed the infection.

In connection with child-birth one other death was recorded during 1907. The following was the cause as stated on the certificate of death :—Parturition, Convulsions.

MEASURES TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

ISOLATION.

During 1907, 162 cases of Scarlet Fever, 27 cases of Enteric Fever, 25 cases of Measles, 51 cases of Diphtheria, 5 other diseases, and 7 from outside the Borough, have been removed to the Sanatorium, a total of 277 cases, as compared with 263 the previous year. (See Table XVIII.) Of Scarlet Fever 91.53 per cent. of the cases were removed to Hospital, as against 92.35 per cent., in 1906 ; of Enteric Fever 65.85 per cent., as against 71.8 per cent. in 1906. Of Diphtheria cases 60.7 per cent. were treated in Hospital, a marked increase on the figures for 1906.

INFECTIOUS DISEASES HOSPITAL.

TABLE XVIII.

Patients admitted to the Sanatorium during the year 1907 :—

No. of cases notified.	DISEASES.	Total admitted.	MALES.		FEMALES		Discharged.	Died.	Remaining in Hospital Dec. 31st	
			Under 12 years	Over 12 years	Under 12 years	Over 12 years			1907	1906
...	Small-pox	...	...	...	...	...	...	...	...	...
177	Scarlet Fever	162	50	12	79	21	91	4	89	22
41	Enteric Fever	27	1	9	9	8	16	5	10	4
84	Diphtheria	51	15	2	29	5	41	5	14	9
...	Membranous Croup	...	...	...	...	...	...	...	...	...
309	Measles	25	9	...	15	1	25	...	...	...
1	Rötheln.	...	...	...	...	...	...	...	...	...
2	Puerperal Fever	...	...	...	...	...	...	...	...	...
13	Erysipelas	...	...	...	...	...	...	...	...	...
149	Chicken-pox	1	1	...	...	...	1	...	...	...
4	Other Diseases	4	3	1	...	...	3	1	...	...
...	Cases from other districts ...	7	1	2	1	3	7	...	...	...
	Totals	277	80	26	133	38	184	15	113	35
			TO ELSWICK HOSPITAL.							
	Small-pox	...	...	...	...	...	...	...	...	...
780	Totals	277	80	26	133	38	184	15	113	35

The extensions have met with high praise from all who have inspected the Sanatorium, and the friends of patients have also been highly delighted with the provision made in the new blocks for the comfort of the patients; this has still further facilitated the attainment of the object of the Hospital, namely, to isolate all cases of infectious disease which cannot be effectively isolated and nursed at home.

Many of the patients' friends have warmly and spontaneously expressed their great appreciation of all that is done by the efforts of the Corporation, and by the work and tact and skill of the matron, and nurses, to contribute to the welfare of the patients. We were often asked to admit patients suffering from Measles, and during the visiting season of 1907 we had 25 cases admitted from Blackpool, and several cases from outside on special request. At certain periods of the year we had every block in use.

There have been several changes in the nursing staff during the past year. Three of the probationers completed their two years' training, five others left before the completion of the time for other causes, and nine new probationers had to be engaged.

I have great pleasure in expressing my satisfaction with the Hospital administration all throughout the year. The Matron and the Nurses have carried out their duties with tact and judgment, as well as with zeal and devotion, and I have frequently been gratified with the warm, spontaneous expressions of gratitude from patients and their friends who have realised something of the great care and attention bestowed on the patients by the nursing staff. It is quite certain that some severe cases owed their recovery largely to the unremitting care of the nurses.

The details of the cost of the Hospital, as nearly as can be ascertained, are appended.

INFECTIOUS DISEASES HOSPITAL.

	£
Matron	70
Porters, Nurses, and other salaries	477
Provisions for Inmates, Staff, &c.	576
Gas, Coal, Water, Rates, and Taxes, and Insurance	667
Furniture, Cutlery, Crockery, &c.	73
Building Repairs	17
Gardening	63
Materials for Uniforms	46
Medicine and Medical Appliances	65
Washing and Cleaning Materials	60
Advertising, Printing, and Stationery	23
Miscellaneous	54
	2,191
Less Receipts from Inmates	118
	2,073
Interest and Sinking Fund	1,439
Private Street Works	199
	£3,711

Up to 1905 it was customary to give the cost for the financial year ending March 31st, but it is obviously more desirable to give, if possible, the actual cost for the year under review. I have accordingly made arrangements which enable me to give the cost of the upkeep of the Hospital for the year beginning January 1st, 1907, and ending December 31st, 1907. It is to be observed that one large item for private street works, due to the forming of the back street behind the Sanatorium, and the road at the easterly end of the grounds has been included, although it should really be a capital charge. It has been arranged to pay this out of revenue in three annual instalments.

During the year ending December 31st the average stay in the Hospital of the 266 patients was 40.6 days.

Not including the interest and sinking fund in the Hospital expenses, the cost per week (per patient) was £1 8s.5.1d. or £73 18s. 1.2d. per year, as compared with £1 4s. per week in 1906.

Deducting the amount received from patients, and including interest and sinking fund, and street improvement expenses, the actual loss to the ratepayers of each patient averaged £2 8s. 1.8d. per week, as compared with £2 4s. 2.9d. per week in 1906. *In this cost, the cost of disinfecting articles sent from houses in the Borough to be disinfected is included.*

In Table XIX. I give the number of cases treated at the Hospital since 1891 together with the percentage mortality amongst them, as compared with that amongst patients treated at home during the same period :—

TABLE XIX.

(Corresponding to Table XI. in former Reports).

DISEASE.	Cases treated in Hospital.	Deaths	Per cent. of Mortality	Cases treated at Home.	Deaths	Per cent. of Mortality.
Measles	375	2	0.53	6,837	110	1.61
Scarlet Fever	2,348	75	3.19	390	41	10.51
Enteric Fever	527	98	18.60	350	86	24.57
Diphtheria	155	25	16.13	434	114	26.27
Typhus Fever	1	1	100.00	...	...	...
Erysipelas	5	2	40.00	128	4	3.13

DISINFECTION.

After cases of the chief notifiable diseases, the houses are fumigated with formaldehyde vapour, after washing down the walls and furniture with solution of perchloride of mercury, or spraying the walls with a solution of formaldehyde the spraying machines purchased some years ago, giving very good results. Clothes, bedding, etc., are removed to the Sanatorium, and disinfected in the steam disinfectors there ; 25,428 articles were so disinfected during 1907.

In the case of Typhoid Fever and Diphtheria the drains are flushed with a solution of chloride of lime, and in case of an outbreak of disease in a particular district, the sewers in the district are flushed with a similar solution.

After cases of measles, fumigation of the room with formaldehyde is carried out. After a death from Phthisis, on request, the house is disinfected, and similarly after a death from cancer.

All typhoid excreta, whether the case is treated at the Sanatorium or at home, are collected in special pails and burnt at the destructor.

Disinfectants are distributed on application at the Health Office to the houses where infectious diseases have occurred.

The drains are tested after all cases of enteric fever, diphtheria, and after diarrhœa deaths.

VACCINATION.

Dr. Butcher has kindly informed me that, as Public Vaccinator for the north section of the town in 1907 he performed 188 primary vaccinations, and 1 re-vaccination, 189 in all. Dr. Vinter, as Public Vaccinator for the southern division of the town, has performed :—Primary vaccinations, 289 ; re-vaccinations, 1. The totals are therefore :—Primary vaccinations, 477 ; re-vaccinations, 2. Only successful vaccinations are included in this total. Through the courtesy of Mr. Dixon, the Registrar of Births and Deaths, I learn that the total number of primary vaccinations in Blackpool during 1907 was 809. This figure includes, of course, those vaccinations performed by Dr. Butcher and Dr. Vinter, and also those done by medical men in private practice. It would be a great safeguard if a system of re-vaccination of all children after attaining the age of 12 years, could be instituted, but I am afraid that the tendency among many is to neglect even primary vaccination. There seems to be an increasing number seeking to take advantage of the conscientious objector clause, and if this spreads there will be serious consequences to face in the future. There can be no doubt that it is merely ignorance and prejudice that lead to this antipathy to vaccination. I have never yet met anyone who had really studied the question, and had a practical knowledge of small-pox, and of vaccination, who had not also a thorough belief in the efficacy of this preventive measure.

PART III.

WORK OF THE HEALTH DEPARTMENT, 1907.

The work of the Health Department has been carried out by the Inspectors and Drain Testers, under the direction of the Medical Officer of Health and of the Chief Inspector, Mr. T. Sanderson.

The card system of keeping of records, to which I have previously referred, has been further extended and has proved of great utility, simplifying the records and correlating various branches of work. Reference to past work is very greatly facilitated, and as years go on the value of the system will be more and more apparent.

The system is founded on the address or number and street of the house or premises, as the basis or key to the record. Each card record, when completed, is filed in a cabinet, so that all in one street are together, the numbers coming according to their sequence ; the streets are arranged in alphabetical order. At any moment one can look up the record of a house as regards deaths, infectious diseases, or sanitary defects, by turning up the cards in the stock cabinet.

I am always pleased to show and explain the whole system to anyone interested in administrative details.

No changes have occurred during the year in the staff of Inspectors, except the addition of a Lady Health Visitor in the person of Miss Annie Heaton.

I regret to draw attention once more to the fact that no progress has been made with regard to the provision of New Offices for the Health Department. This has been under consideration for many years, and the temporary premises now in use are extremely inconvenient, unsuitable, and far too small for our requirements. Some years ago land was acquired in Sefton Street, and the Health Committee are paying over £100 a year in interest and sinking fund for this site.

When I came here in 1901 new offices had already been promised, and yet we have been compelled to drag along for all these years under the severe handicap of totally unsuitable premises. I think that definite steps should be taken in the near future to provide the necessary accommodation, or I am afraid, owing to the increasing work devolving on us, the efficiency of the Department will be seriously imperilled.

The following is a summary of the work of the Health Department during the year, in regard to the abatement of nuisances, and the remedying of sanitary defects; to this is appended a summary of the enquiries made into cases of infectious disease, and details as to the amount of work done in the way of disinfecting houses and goods. Comparison figures for 1906 are also given.

SUMMARY.

		1906.	1907.
Complaints received		365	362
Visits and Inspections (Total)		13,942	16,661
Number of Houses fully inspected		824	761
Number of inspections of work in progress		2,962	4,014
Visits to houses and other premises		2,101	1,910
Re-inspections in relation to nuisances under notice		1,073	1,480
Inspections of Factories and Workshops		142	464
Inspections of Bakehouses		132	122
Inspections of Common Lodging-houses		938	944
Inspections of Manure Heaps		591	370
Sands Inspections		258	244
Visits and Enquiries in relation to Infectious Diseases		3,062	2,633
Enquiries into Deaths		815	743
Smoke observations (half-hour duration each)		5	20
Visits under Shop Hours Acts		272	925
Visits made under Midwives' Act, 1902		6	10
Visits to Tents, Vans, and Sheds		155	164
Inspections of Back Passages		606	38
Visits to Houses where Births have occurred		—	548
Visits under Employment of Children Act		—	1,271
Notices Served for the Abatement of Nuisances—			
Councils		91	126
Preliminary		769	676
Verbal		185	164
House Drains Tested—Total Number of Tests made		1,396	1,505
New Houses Examined—			
Drains	Fully Satisfactory	1	13
	Passable	267	269
	Unsatisfactory	11	8
W.C.'s	Satisfactory	394	394
	Of defective construction	4	16
Ash Receptacles	Satisfactory	296	317
	Unsatisfactory	10	41
Site of House	Satisfactory	278	282
	Unsatisfactory	1	6
Other Houses Drains (1st test)	Satisfactory	73	89
	Unsatisfactory	269	211
House Drains re-tested during re-laying		596	681

	1906.	1907.
Houses passed off as satisfactory after drainage defects repaired	179	234
Number of Houses where sanitary defects were found	892	926
Number of Houses where sanitary defects were remedied	715	812
Number of sanitary defects remedied	1,664	1,878
Drains.		
Drains laid, re-laid, disconnected, and ventilated ..	174	271
Drains repaired and cleaned out	366	340
Unsuitable gully traps replaced by properly trapped gullies and new gullies fixed	40	33
W.C.'s.		
New w.c'.s fixed in lieu of privies, pail closets, and defective w.c.'s	35	70
Water closets repaired	127	150
Water closets unblocked	42	38
Fittings and water provided for w.c.'s.. ..	28	69
W.C. soil pipes repaired and ventilated ..	44	45
Earth Closets provided	6	—
Refuse Receptacles. (See also Special Report).		
Ashpits abolished	—	9
Ashbins provided	11	8
Ash receptacles repaired	6	13
Manure receptacles provided	15	11
Cesspools abolished	3	—
Cesspools provided	1	—
Privies abolished	4	9
Waste Pipes.		
Bath, lavatory, slopstone, and rainwater pipes disconnected over gullies	6	18
Do. do. do. wastepipes trapped ..	9	15
New slopstone wastepipes fixed	61	42
New rainwater pipes fixed	—	3
Rainwater pipes and roof gutters repaired ..	21	27

Miscellaneous.	1906.	1907.
Houses cleansed and limewashed	5	12
Floors re-laid with flags	15	41
Floors re-laid with concrete	43	51
Back yards repaired	96	79
Back yards flagged or concreted	62	128
Back passages cleansed	59	14
Accumulations removed	211	171
Animals removed from improper situations	30	19
Roofs repaired	14	17
Rooms ventilated	102	149
Chimneys raised to abate smoke nuisance	4	4
Premises closed	—	—
Yards cleansed	22	16
Watercourse cleansed	1	4
Gable end of house cemented	1	—
Overcrowding ceased	—	2
Number of manholes inspected	9	48
Number of manholes reported to Cleansing Superintendent	9	8
Back Streets requiring forming reported	9	29
Erections in Yards, &c., reported	10	18
Letters	2,252	2,246
Infectious Diseases.		
Inquiries into cases of Infectious Disease (see Visits and inspections)	—	—
Houses disinfected after cases of Infectious Diseases	894	668
Houses disinfected after cases of consumption	46	48
Other premises disinfected	67	75
Isolation notices served upon householders	904	713
Isolation notices served upon School Managers	650	514
Other notices to School Managers with regard to Infectious Disease	745	527
Other notices to Householders with regard to Infectious Disease	745	527
Notices to Free Library with regard to Infectious Disease	843	657

Articles removed from 342 Houses to Sanatorium.

Sheets, quilts, blankets, etc.	2,650
Articles of clothing	10,788
Pillows and bolsters	1,521
Beds	631
Mattresses	317
Carpets	777
Rugs and mats	594
Curtains	1,203
Cushions	395
Table cloths	292
Books	137
Miscellaneous articles	3,303
Articles from Sanatorium	2,820
Total	25,428

The visits and inspections during 1907 reached the prodigious total of 16,661, and these do not include the visits paid by Mr. Newby, the Food Inspector, which are detailed on another page, nor do they include visits to houses in connection with ash receptacles, which are given page 123, but they do include the visits paid by Miss Heaton to houses where births have occurred, and visits under the Employment of Children Act.

In addition I have made a large number of personal visits in connection with nearly every variety of work that comes under the Department. In all cases of difficulty the Inspectors are instructed to report very fully to me, and wherever I consider it necessary I pay personal visits.

A very considerable amount of time is spent every year on visiting premises to see to the emptying of manure pits. According to our Bye-laws the occupier is bound to have the manure completely removed at least once a week, but there is a great deal of laxity and neglect in this matter, and frequently several visits are required before the pits are properly emptied. I think it would be very desirable to prosecute one or two occupiers for negligence in this respect, which would at once produce a notable improvement all over the town, and save the repeated visits now necessary. Considering the unsightliness of these heaps, the proximity in which some are placed to dwelling-houses, the objectionable smell, and the well-known part which manure pits play in the breeding and distribution of house flies, this is a matter which deserves serious attention.

It will be observed that 290 new houses have been tested during the year, as compared with 279 in 1906, 201 in 1905, 294 in 1904, and 312 in 1903.

In connection with several of these new houses the builders have adopted the very sensible plan of providing intercepting manholes instead of intercepting traps, thus allowing for easy clearing of the drain in case of a block. But I regret to say that many of these manholes have been finished off in a most unsatisfactory manner, the walls have been built of common porous brick not cemented inside, the manhole cover has been of light material, and not left firmly fastened air-tight with Russian tallow. What is the use of going to all the trouble to put cement joints on drains and to test them carefully if the manhole which forms part of the drain is left in a leaky condition entirely pervious to sewer-gas ?

A still more serious matter has been the entire omission to insert and fix the stopper in the rodding-arm, and to fasten this in tightly and seal it air-tight by Russian tallow. This omission, of course, entirely nullifies the value of the intercepting trap, and really creates the low ventilator leading off from the manhole into a sewer ventilator placed in as dangerous a position as could possibly be contrived. In some cases the stopper was merely placed in the rodding-arm without tallow, and these loose stoppers are extremely liable to fall out, and then to pass into the intercepting trap, or into the drain beyond, and lead to a very serious blockage. We have had several instances of this. It would be very desirable to insist upon all intercepting manholes being provided with an arrangement for closing the mouth of the rodding-arm firmly and securely so that no back pressure from the sewer could displace the stopper.

The question of the form of ash receptacle to be supplied in new houses remains in an unsatisfactory condition. The modified ash-receptacle built of brick and cemented inside, with doors into the yard and into the back street, was adopted some years ago by the Council as the prescribed form, but latterly most new houses have simply provided a more or less satisfactory galvanised ash-bin, placed loose in the yard. I regret, also, that there is on the part of many builders an increasing tendency to neglect to provide ash-bins for new houses when first built, and in some cases our Inspectors had to make frequent visits before this provision of the bye-laws was complied with.

A good galvanised bin is very suitable for the storage of dry refuse, but I am strongly of opinion that some special place should be provided for it. Some form of galvanised cage with an irremoveable cover to keep the rain out should be provided, fixed firmly into the wall of the yard, so as to support the bottom of the bin at least 9 inches above the floor of the yard. If an opening through the yard wall were objected to, owing to its liability to be damaged, and owing to the facilities it offers to rag-pickers, the cage could be arranged so as to allow the removal of the bin only by coming inside the yard.

A galvanised bin arranged in this way offers many advantages. It does not hold too much, and therefore requires fairly frequent emptying. It is light enough to allow the scavengers easily to lift it up, and empty the contents into the cart, without causing dust or nuisance. It is kept off the floor of the yard, and the bottom does not get wet and rust so easily, nor can a mass of wet refuse form around the bottom. The lid being permanently fixed at a little distance above the top of the bin does not get lost. It keeps out the rain, and at the same time allows constant ventilation of the inside of the bin.

House drains have been tested in the case of 300 houses (other than new houses) owing to complaints received, or the occurrence of infectious disease, or in the course of systematic inspection as required by the order of the Local Government Board. Of these 300 houses 89 were found satisfactory—a much larger proportion than in previous years. Among these were some, tested on account of infectious disease, where drains had been relaid with cement joints under the direction of the Health Department, and it was gratifying to find that these had remained satisfactory after (in some instances) years had elapsed since the re-laying.

Some blocks of old property, which have for some time been under observation, and which were in a very insanitary condition, have been put right during 1907, after persistent pressure. In one case moral suasion had to be followed up by an appeal to the courts, a prosecution being instituted in July under the nuisance sections, with the result that an order was obtained for the whole of the work to be done within one month. The same defendant was summoned under Sec. 70 of the Blackpool Improvement Act, 1893, for failing to properly pave the yards of the same houses, and fined 5s. and costs.

It is gratifying to find amongst some property owners a readiness to carry out the requirements of the Health Department, and even to go beyond the minimum that could be legally enforced. Mr. Sanderson, the Chief Inspector, has frequently found owners prepared to put in manholes and inspection chambers when their advantages have been explained, and on the whole the standard of the sanitary work done steadily improves.

Very frequently complaints are received, and we find on inspection that the nuisance is entirely due to the foul condition of the gullies on private premises; the occupiers of the premises are often quite ignorant on the matter, and if the importance of keeping them clean were pointed out, it would perhaps lead to a more sanitary condition all round. In many instances, at the request of occupiers, the Health Department staff visit premises regularly, cleanse the gullies and flush the drains, a small charge being made to cover the cost, and it would probably be a distinct advantage from the sanitary point of view if all private gullies were regularly flushed by Corporation officials, and I think it quite probable that the time will come when this will be done, the cost being borne out of the rates.

As frequent requests are made to the Health Department to disinfect houses in order to rid them of vermin, the Sanitary Committee authorised me to do such work when required, and to make a reasonable charge to cover the expense sustained by the Corporation in doing the work. Altogether 29 houses were stoved on account of vermin during 1907.

There are certain insanitary conditions which, under the present Public Health Acts, are difficult to remedy. I consider it very unfortunate that we cannot prevent stables being built or occupied in direct contact with the walls of dwelling-houses. Similarly there is nothing to prevent manure receptacles from being placed right against the wall of a house, or even directly under a window. Knowing, as we do, that the common house-fly breeds chiefly in these manure pits, and that flies carry on their feet and bodies filthy matter containing enormous numbers of germs, which are thus transferred to milk, or other foods, greatly to their disadvantage from a health point of view, it is much to be regretted that we cannot compel stables and manure receptacles to be placed a minimum distance from houses—say 60 feet.

Again, as regards animals kept in improper situations the Health Authorities should have more power. We can prevent pigs being kept in back-yards, but it is obvious that it is only a degree less objectionable in many cases of yards with only the limited area required by the Bye-laws being used for keeping hens, ducks, or pigeons. Our powers in this matter are not so strong as they might be, and more stringent measures would undoubtedly improve the sanitary condition of some neighbourhoods.

Owing to complaints made by visitors, a systematic investigation of the town was commenced in 1902 in regard to the matter of ash receptacles. It was found that many houses were without suitable provision in this respect, and the Sanitary Committee adopted a strong galvanised iron ash-bin with cover as the approved form to be provided in the case of old houses. From the fact of the liability to loss or damage of moveable ash-receptacles, it is evident that constant attention by the inspectors will be necessary to prevent the condition of affairs being as bad as before the systematic inspections were started. The following is a summary of the work done in this direction :—

Details of work done in regard to ASH RECEPTACLES from January 1st to December 31st, 1907 :—

Total number of visits made	1,016
Satisfactory Ash receptacles	112
Unsatisfactory ash receptacles	268
Re-inspection of houses under notice ...	636

		Preliminary.	Council.
Total number of notices served	(*a*) To abolish ashpits	1	—
	(*b*) To repair modified ashpits ...	21	5
	(*c*) To provide galvanised ashbins...	195	60
Total number of modified ashpits repaired			25
Total number of ashpits abolished			1
Total number of galvanised ashbins provided			223
Total number of informations laid			153

SANITARY CONDITION OF SCHOOLS.

Considerable attention has been paid to the sanitary condition of the Elementary Schools during 1907, but complete inspection was only made in the case of the Thames Road School.

During the year, at the request of the Director of Education, the men of the Health Department cleansed all the gullies on the School premises and flushed all the drains.

At four schools our men unblocked drains which had become blocked, and at two schools defective drains were repaired. The schools have been visited on numerous occasions by the Inspectors or the Medical Officer of Health in connection with Infectious Diseases, and class rooms at seven schools have been thoroughly disinfected during the year.

The recent Education Act will render it necessary that closer attention be paid in the future to the sanitary condition of schools, and there is no doubt about the very great importance of this.

Owing to the outbreak of Diphtheria early in the year in connection with Thames Road Council School, I made a complete examination from a sanitary point of view, and presented a report on the subject to the Education Committee.

The joints of the drains were found to be mostly tight and satisfactory, but a defective arrangement in connection with the rain-water drains had led to rather a serious condition.

Probably because of the tendency of rain-water gullies in South Shore to become blocked with sand, the rain-water drains had been arranged without gullies below the down pipes, and the rain-water drainage system was supposed to form a separate system from the excreta drains, being intended to be cut off by traps placed in the manholes, which received both sets of drains. But the access openings in the drains inside the manholes intended for rodding purposes were not sealed with Russian tallow, were not tight, and allowed foul air from the manholes to pass freely into the rain-water drains, and thus under the eaves of the building whence it would be drawn in by the warmth inside.

On one system a serious fault was discovered ; the ventilating branch from the rain-water drain, and that from the excreta drain, opened in the wall side by side, covered by the same grating. The result was that even with the grid removed and *both pipes open*, smoke driven into the excreta drain passed freely into the rain-water drain, into the manholes, into rain-water down pipes, under the eaves, &c. The rain-water drains were further contaminated by lavatory and slop wastes connected directly to them. These, of course, should go into the excreta drains, as the material is quite as dangerous as sewage.

Owing to leaks and a faulty manhole, drain gas could also pass freely into the main ventilating tunnel from which it could spread to all parts of the school.

The ventilating tunnels were found in a very dirty condition, and the separate ventilators for each class room were found defective and unfinished. It was evidently intended by the architect to carry a tube from the grating in the external wall to a Tobin tube on the farther side. The Tobin tubes were in position, but the connecting flues had been omitted in every case. Also, it was found that the apparatus for regulating the admission of fresh air was rusted tight in several instances, so that the ventilators could not be opened and were useless.

I made certain recommendations to the Managers, and at their request our men carried out repairs to the drains. One of the rooms had the ventilating system put right, but the others were left in the same condition as before.

HOUSING OF THE WORKING CLASSES ACTS, 1890.

Under Part II. of the Act representations were made by the Medical Officer of Health that certain houses forming a block of property on the sandhills, South Shore, and comprising two small cottages and a café were unfit for human habitation, owing to want of proper water supply, defective condition of walls, roof, &c., and want of drainage. Attempts had previously been made to persuade the owner to provide water, and this had been repeatedly promised.

Owing to further promises to carry out the work we delayed going to the magistrates for a closing order. Up to the end of 1907 nothing was done, but the tenants vacated the premises. Since the end of 1907, however, a start has been made to put the premises into sanitary condition.

SMOKE NUISANCES.

There has not been very great cause for complaint in regard to chimneys of works during 1907. Only 20 full half-hour observations have been taken, although many chimneys were watched for shorter periods. Warning letters have been written in several instances, in which an unnecessary amount of smoke was emitted, even although the 2½ minutes limit during half-an-hour had not been exceeded, and in two cases, in which warnings had been given, it was thought necessary to take legal proceedings on a repetition of the offences.

In the first case the magistrates made an order for abatement of the nuisance. In the second case, as an order for abatement had been made in a previous occasion, the defendants were fined 20s. and costs.

Very few complaints were received during 1907 of offensive smells from the Destructor works chimney, and I am convinced that in these cases the destructor was not at fault. Whenever I could get definite evidence as to the place where the smell was noticed, and the time of day or night, I examined the anemoscope chart, showing the direction of wind at the time, and in every instance where full particulars were given I found that it was impossible that the destructor could have been the cause of the smells complained of.

The smoke from the chimneys of private houses is likely in the future to be of much greater menace to the clearness of our atmosphere than the smoke from the chimneys of works, and with the increase in size of the town will come an increasing tendency to fogs.

I would therefore repeat my plea that every facility should be given for the extended use, for heating, lighting, and motive power, of gas and electricity, as these are not liable to contaminate the air with soot particles.

Already in several workshops electricity is used as the motive power, and in some instances also for heating purposes, and I trust that all persons starting new industries in the town will carefully consider whether their own pecuniary interests will not be advanced by using gas or electricity for motive power, instead of putting down an expensive steam plant, whilst at the same time there is less chance of interference with the amenities of the town. I would also suggest that it is highly desirable for the Corporation to supply gas and electricity at the lowest reasonable prices especially for such purposes as driving machinery or heating workshops or other premises.

FACTORY AND WORKSHOP ACT, 1901.

In accordance with the provisions of Sect. 132 of the Act, every Medical Officer of Health is required in his Annual Report to " report specifically on the administration of this Act in workshops and workplaces, and he shall send a copy of his annual report, or as much of it as deals with this subject, to the Secretary of State."

The administration of the Act as regards Factories comes more under the Government Factory Inspector, which accounts for the fact that only forty visits have been paid to Factories by our Inspectors during the year. If the Government Inspector on his visit to a Factory notices any deficiencies as to Sanitary accommodation, &c., he sends word to the Medical Officer of Health, and then our Inspectors take the matter up.

Building and Furnishing Trades :

Joinery, Sawmill, and Cabinet Works	36	
Stone Works and Mortar Mills	10	
Brick Works	7	
		—53

Engineering :

Engineering Works and Smithies	9	
Cycle and Motor Car Works	7	
Toolmaking	1	
Rolling Stock	1	
		—18

Coachbuilding and Wheelwrights	6	
		— 6

Preparation of Food, &c. :

Bake-houses	18	
Sausage Works...........	3	
Sugar Boiling	2	
Ice Cream Making	3	
Dairies	1	
Aerated Water Manufacturing, Beer Bottling, and Brewing	21	
Other provisions	1	
		—49
		126

Forward.........	126

Wearing Apparel :

Dress, Millinery, and Tailoring	1	
Hosiery Works	1	
Bootmaking & repairing	8	
		—10

Letterpress Printing :

Letterpress Printing and Bookbinding	12	
		—12

Lighting :

Electricity generating .	10	
Gas Works	1	
		—11

Laundries :

Laundries and Carpet-beating Works	10	
Bedding, &c., Cleaning Works	1	
		—11

Miscellaneous :

Fancy Linen Making ...	1	
Electro-plating	2	
Photograph Printing ...	1	
Toy Making	1	
Picture Frame Making	1	
Firewood Cutting	1	
Wood Turning	1	
Cigar Making	2	
Provender and Corn Mills	8	
		—17

Total..............	187

As regards Workshops, there are 607 in all registered in the Borough, an increase of 81, classified as follows:—

Clothing, &c.:

Milliners	34	
Tailors	52	
*Dress	104	
Boots and Clogs	93	
Underclothing and baby linen	5	
Hosiery	4	
		292

Food and Drink:

Bakers and confectioners	183	
Sugar boiling	6	
Beer bottling	4	
Plucking place	1	
Pickle works	1	
		195

Building Trades:

Plumbing	10	
Joiners	18	
		28

Furniture:

Cabinetmaking and upholstery	14	
Wire mattresses	1	
French polisher	3	
		18
		533

Forward		533

Conveyances, &c.:

Wheelwrights and coach builders	3	
Coach painters	1	
Saddlery	5	
Black and whitesmiths	15	
Cycle repairs	7	
Gunsmith	1	
		32

Jewellery, &c.:

Watch repairing	5	
Jewellery	1	
Photo mounting, &c.	12	
Picture-frame making	5	
		23

Other Trades:

Hand Laundries	5	
Dry cleaning	1	
Cigar manufacturer	2	
Brush manufacturer	2	
Painter	2	
Bookbinder	2	
Fibrous Plasterer	1	
Firewood	1	
Electrical Appliances	2	
Basket Manufacturer	1	
		19
Total		607

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* *NOTE.—Where Millinery and Dress are made on the same premises, they are classified under "Dress."*

I now submit, in the official form required by the Home Office, the following report as to the proceedings which have been taken in Blackpool in connection with the supervision of the Factories, Workshops, and Workplaces of the Borough in regard to those matters placed by the Act under the control of the local sanitary authority.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES, AND HOMEWORK.

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

PREMISES	Number of		
	Inspections	Written Notices	Prosecution
FACTORIES .... (Including Factory Laundries)	40	4	......
WORKSHOPS .... (Including Workshop Laundries)	526	47	......
WORKPLACES .... (Other than Outworkers' premises)	309	......	......
TOTAL	875	51	......

2.—DEFECTS FOUND.

PARTICULARS.	Number of Defects			Number of Prosecutions
	Found	Re-medied	Referred to H.M. Inspector.	
*Nuisances under the Public Health Acts :—**				
Want of Cleanliness	31	19	...	...
Want of Ventilation	9	4	...	...
Overcrowding	...	...	...	...
Want of Draining of Floors	1	...	...	...
Other Nuisances	33	30	...	...
Sanitary accommodations... Insufficient	5	5	...	...
Sanitary accommodations... Unsuitable or Defective	1	1	...	...
Sanitary accommodations... Not separate for sexes	2	1	...	...
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouses (S. 101)	...	...	...	...
Breach of special Sanitary requirements for bakehouses (SS. 97 to 100)	27	12	...	...
Other offences	...	...	...	...
(Excluding offences relating to Outwork which are included in Part 3 of this Report).				
TOTAL	109	72	...	...

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* Including those specified in Sections 2, 3, 7, and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

3.—HOME WORK.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.										Number of Inspections of Out-workers' premises.	OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES SECTIONS 109, 110.		
	Lists received from Employers.						Numbers of Addresses of Outworkers received from other Councils.	Numbers of Addresses of Outworkers forwarded to other Councils.	Prosecutions.								
	Twice in the year.			Once in the year.													
		Outworkers.			Outworkers.												
	Lists.	Con-tractors.	Work men.	Lists.	Con-tractors.	Work men.			Failing to keep or permit in-spection of lists.	Failing to send lists.		In-stances.	Notices served.	Prosecu-tions.	In-stances.	Orders made (S. 110).	Prosecu-tions (Sections 109, 110)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Wearing Apparel :—																	
(1) Making, &c.	12	2	26	17	9	22	5	13	1	1	74	—	—	—	—	—	—
(2) Cleaning and Washing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lace, lace curtains and nets ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Artificial flowers	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nets, other than wire nets	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tents, Sacks	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Furniture and Upholstery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fur pulling	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Feather sorting	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Umbrellas, &c.	2	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Carding, &c., of buttons, &c. ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paper Bags and Boxes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Brush Making, Basket Making	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racket and Tennis balls	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stuffed Toys	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
File Making	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Electro Plate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cables and Chains	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Anchors and Grapnels............	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cart Gear	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Locks, Latches, and Keys ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pea picking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	14	4	28	17	9	22	5	13	1	1	74	—	—	—	—	—	—

4.—REGISTERED WORKSHOPS.

Workshops on Register (S.131) at end of 1907		Number
Important classes of workshops, such as workshop bakehouses, may be enumerated here.	Making of wearing apparel	292
	Workshop Bakehouses	183
	Preparation of other Foods, &c.	12
	Building Trades	28
	Furniture Making, &c	18
	Conveyances, &c	32
	Other Trades	42
	Total number of Workshops on Register ...	607

5.—OTHER MATTERS.

CLASS.		Number.
Matters notified to H.M. Inspectors of Factories :—		
Failure to affix Abstract of the Factory and Workshop Act (S. 133)		49
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5)	Notified by H.M. Inspector	12
	Reports (of action taken) sent to H.M. Inspector ...	12
Other		1
Underground Bakehouses (S. 101) :—		
Certificates granted during year		...
In use at the end of year		6
New Workshops reported to H.M. Inspector		84

The total number of visits to "Workplaces," viz., 309, includes 90 visits to restaurant kitchens, and 219 to Ice Cream Workshops, but does not include 983 visits to Slaughter-houses, which should probably be considered workplaces also, which would bring the number of visits to Workplaces up to 1,292.

Defects as to want of cleanliness, &c., in many of these workplaces were remedied on verbal notice by the Inspector, but no record was kept of these.

As mentioned in last report the sending in of lists of Outworkers was almost entirely neglected, notwithstanding the personal delivery of printed circulars to all those occupiers of workshops likely to be affected. The Health Committee finally concluded that the only course open was to make an example by taking a prosecution, and this was done in one instance under two informations, one for not keeping a list of Outworkers on his premises, and the other for failure to send in a list of Outworkers as required by the Act. The Corporation did not press for a penalty, as they wished the case to be a warning generally. The magistrates convicted, and ordered defendant to pay costs in both cases. This prosecution had a most salutary effect in arousing the attention of occupiers of workshops to their duties under the Act.

SHOP HOURS ACTS.

Under the various Shop Hours Acts, 925 visits were made during 1907, chiefly with a view to prevent infringement of the section as to the employment of young persons.

Two persons were summoned for failing to exhibit in their shop the card referring to the hours of work for young persons. In one case defendant was fined 1s. and costs, and the other 2s. 6d. and costs.

EMPLOYMENT OF CHILDREN ACT.

Considerable attention was paid during 1907, especially in the season, to the administration of this Act, 1,271 visits in all being paid for the purposes of observations in connection with the Act, or to give warnings to those concerned.

It was necessary to take legal proceedings in three cases for the offence of employing a child under 14 years of age after 9 p.m. In each case a fine of 2s. 6d. and costs was imposed.

SHOP HOURS ACT, 1904.

The Barbers' and Hairdressers' Association having strongly renewed their claim to have the Shop Hours Act put into force for their own trade only, the matter was reconsidered by the Sub-Committee. Finally an order was drafted, and after the statutory notices giving time for those interested to make objections the Order as amended was adopted, approved by the Council, and sent up to the Home Office for approval. Since the end of 1907 this approval has been given, so that the Order will come into force next winter.

MIDWIVES' ACT, 1902.

During 1907 there were 24 names on our Register of Midwives, but only 22 sent in the prescribed form stating their intention to practise in the Borough, the other two only acting as monthly nurses.

During the year one midwife left the district, and 4 others came to Blackpool to commence work here. There have been four changes of address recorded within the Borough.

During the year, as Medical Officer to the Midwives Act Sub-Committee, I personally visited most of the Midwives, and inspected their case-books and appliances. Several of them still appeared to have very vague ideas as to the meaning of the rules, and as to their responsibilities under the Act, and several appeared to find considerable difficulty in entering up their case-books properly. Since Miss Heaton's appointment she has visited the houses of many of the midwives and given what help she could.

Early in January I sent out circulars to all the midwives who had not sent in the form stating their intention to practise. When the revised rules came into operation in May, I sent further circulars informing them of the change, and also sent to each an extract from the revised rules, containing the rules specially referring to their duties.

Notwithstanding all this I am afraid the rules have not been carried out to the full extent. During the year we only received notification of sending for medical help on four occasions; notification of death of child in four instances; and eight notifications of still-births. As regards this latter the recent notification of Births Act seems likely to lead to a much more complete list of these cases being given.

In April I had to send a letter of reprimand to a midwife for failing to notify the death of a child. The case came to my knowledge through the coroner holding an inquest. The midwife pleaded that the omission was through inadvertance. In June, I had to write to two midwives for failing to notify changes of address. One midwife had to be suspended for a period owing to a case of puerperal fever occurring in her practice.

FORMATION, PAVING, &c., OF STREETS.

During 1907, I reported to the Borough Surveyor 29 back streets and passages as being in a dirty condition and requiring forming. Many others had already been reported in previous years.

A considerable amount of work has been done under the direction of the Highway Committee during 1907, and by the courtesy of the Borough Surveyor I am able to give the following lists:—

PRIVATE STREET WORKS

CARRIED OUT BY THE HIGHWAY DEPARTMENT, BETWEEN JANUARY 1st AND DEC. 31st, 1907.

FRONT STREETS—8.

East Street.
Liverpool Road.
Bryan Road.
Myrtle Street.
Maple Street.
Sherbourne Road, from Carshalton Road to Clevedon Road.
Street in front of Park Hotel.
Dixon Street.

BACK STREETS—40.

Behind Newton Drive, London Road, and Manchester Road.
Between Nos. 11 and 13, Manchester Road.
Between Oxford Road and Cambridge Road, and behind Nos. 22 to 32, Oxford Road.
Behind Bank Hey Street, and leading to Temple Street.
On the north side of No. 2, Regent Road.
Between Nos. 23 and 25, Manchester Road.
Leading from Durham Road to Cambridge Road, and behind 21 to 35, Durham Road.
Behind Oxford Road, Granville Road, and Cambridge Road.
,, Adelaide Street, and running from Hull Street in a westerly direction.

Behind Raikes Road, Durham Road, and Cambridge Road.

,, Raikes Road, Cambridge Road, and Oxford Road.

,, George Street, and leading from Moister Road to Fenton Road.

Between Fenton Road and Moister Road.

Behind Boothley Road, and leading from Moister Road to Fenton Road.

Between Fenton Road and Selbourne Road.

,, Castle Gate and Wolsey Road, and running from Ward Street in an easterly direction.

Behind Nos. 3 to 29, St. Helier's Road.

Behind Bloomfield Road, and leading from St. Helier's Road to Saville Road.

Between No. 48 and 50, Park Road.

Off Bloomfield Road, for Waterloo Road Council School.

Behind George Street, and leading from Fenton Road to Selbourne Road.

Behind Boothley Road, and leading from Fenton Road to Selbourne Road.

Leading from Oxford Road to Cambridge Road, and behind 34 to 48, Oxford Road.

Leading from Oxford Road to Cambridge Road, and behind 10 to 20, Oxford Road.

Between Read's Avenue and Palatine Road, for a distance of 447½ feet from Back Park Avenue.

Behind Park Avenue, from Palatine Road to Read's Avenue.

Between Nos. 104 and 106, Sherbourne Road.

Leading from Durham Road to Cambridge Road, and behind 9 to 19, Durham Road.

Between South Parade and Bolton Street.

Behind Nos. 56 to 68, Bolton Street.

Leading from Back Brighton Parade to General Street.

Between Devonshire Road and Manchester Road.

,, Nos. 38 and 40, Manchester Road.

Behind houses on East side of Elizabeth Street, and leading from Peter Street to Caunce Street.

Between Peter Street and Caunce Street, and leading from the Back Street on the east side of Elizabeth Street to the rear of No. 85, Caunce Street.

Between Waterloo Road and St. Bede's Avenue.
,, Nos. 41 and 43, Devonshire Road.
,, Nos. 23 and 31, Devonshire Road.
,, Peter Street and Caunce Street, from Back Buchanan Street to Elizabeth Street.
,, Nos. 52 and 54, Manchester Road.

BACK PASSAGES—10.

Between Park Road and Regent Road.
,, Nos. 62 and 64, and behind Nos. 60 and 62, Park Road.
Behind houses Nos. 38 and 40, Cocker Street.
,, Nos. 50 and 58, Park Road.
,, Hornby Street, Eden Street, and Lark Hill Street.
,, George Street, and leading from Hornby Street to Lark Hill Street.
Off Back Church Street, and behind South side of Birley Street.
Between Raikes Road and Lily Street.
,, Nos. 33 and 35, Market Street.
Behind Nos. 11 to 21, Lark Hill Street.

The dirty condition of some back passages is a disgrace to the town. Several occupiers being concerned, no one looks upon it as his business to keep the passage clean, and frequently these passages become filled by accumulations of all kinds of filth. Owing to pressure of other matters it was not possible to have as many inspections of these as in 1906, but some attention was paid to the worst cases, and notices served on the occupiers adjoining.

SANDS INSPECTION.

Regular inspections of the sands have been continued during 1907. Altogether 244 inspections have been made.

I am quite convinced that on the whole the condition of the sands has much improved during the last five or six years, the sands being clean and firm, showing that the sewage sludge is being well carried away. On the other hand there is occasionally evidence of sewage pollution after strong westerly or south-westerly winds.

On most of the 244 days on which inspections were made the sands were quite clean, and entirely free from solid excreta, but in a good number of instances there was a little sewage sludge. This was most frequently observed in the channels under the North and Central Piers, and by the sewer outfall pipes, and in many cases the rest of the sands were clean and firm.

During the summer the Borough Surveyor added a length of 150 yards to the sewer outfall, thus taking the sewage beyond a sandbank which had formed, and was apt to prevent the sewage getting away freely. There is not the slightest doubt that this has considerably modified the nuisance formerly experienced both as regards solid excreta and sewage sludge. It is true that there is still some liability for the return on to the sands of a certain amount of floating sewage material during the prevalence of westerly winds, and when the normal population is more than quadrupled by the number of visitors. This occurred on several occasions during August, 1907. To prevent entirely the unsightly and disagreeable return of solid matters, I still strongly advise the adoption of a process of screening the sewage as referred to in my last report. I think that this, along with the lengthened outfall, would practically put a stop to the nuisance, and would do a great deal to improve our reputation as a health resort.

SALE OF FOOD AND DRUGS ACTS.

The following Samples were taken for Analysis under the precedure enjoined by the above Acts:—

SUMMARY SHOWING NUMBER OF SAMPLES ANALYSED DURING 1907.

Description of Sample.	No. of Samples analysed.	No. of Samples genuine	No. of Samples not genuine	
			Total No.	Official No.
Bloater Paste	1	1	...	...
Brawn	4	4	...	...
Bread and Butter	1	...	1	364
Butter (332,333, U.S.)	38	36	2	350, 373
Butter-scotch	1	...	...	...
Cheese	1	1	...	...
Coffee	15	15	...	...
Colouring matter (1 U.S.)	1	1	...	...
Cream	4	2	2	307, 341
Fish (Potted)	1	1	...	...
Ginger (Ground)	1	1	...	...
Honey	1	1	...	...
Lard	4	4	...	...
Lobster (Potted) (385,404, U.S.)	3	1	2	385, 404
Milk	69	49	20	249, 252, 253, 258, 284, 285, 287, 289, 293, 295, 316, 323, 324, 319, 320, 317, 318, 325, 348, 349
Mustard	2	2	...	...
Peas (Bottled)	1	...	1	360
Pepper	1	1	...	...
Pepper (White)	12	12	...	...
Prawns (Picked)	1	1	...	...
Salmon Paste	1	1	...	...
Salmon and Shrimps (Potted)	1	1	...	...
Sausage (German)	1	1	...	...
Sausage	1	1	...	...
Shrimps (Potted)	7	4	3	308, 342, 366
Shrimps (Picked)	2	1	1	299
Whiskey (Irish)	1	...	1	398
Whisky (Scotch)	8	3	5	310, 344, 358, 365, 396
Totals	184	145	39	...

NOTE.—U.S. un-official sample.

COMMENTS ON SAMPLES TAKEN UNDER THE FOOD AND DRUGS ACTS, DURING 1907.

Out of the 184 samples sent to the Public Analyst during the year, five were unofficial or " informal " samples. They include two of Butter, 2 of Potted Lobster, and 1 of colouring matter. The 2 samples of Potted Lobster were not genuine, and are referred to later; the colouring matter was a material used for colouring Brawn. Although the four samples of Brawn analysed are counted as " genuine," two of them were reported as artificially coloured with a coal-tar dye. A sample of the colouring matter used in one of the cases was, therefore, obtained, and it was found to consist of 80 % of Rice and 20 % of a red coal-tar dye, having the character of a sulphonated diazo dye, such as xylidine scarlet. The dye was free from arsenic. Letters were sent to the vendors of this highly-coloured brawn, pointing out how undesirable was the practice of using this colouring material.

Of the 39 samples included in the Table as " not genuine " seven are thus classed on account of the presence of borate preservative in excess of 0.25 % in the case of cream, or 0.5 % in case of other products. The samples referred to were two of cream, one of butter, one of picked shrimps, and three of potted shrimps.

The two samples of cream contained respectively 0.47 % of borates (No. 307) and 0.35 % of borates (sample 341). Prosecutions were not instituted, but warning letters were sent.

Of the 9 samples of Potted Shrimps and Picked Shrimps analysed four had amounts of preservative in excess of 0.5 %.

The sample of picked shrimps (No. 299) contained 0.65 % of borates, and in this instance the Corporation merely directed the sending of a warning letter. Sample No. 308 of Potted Shrimps contained 0.74 % of borates; the vendor was summoned and fined 5s. and costs. Sample 342 contained only a slight excess of borates (0.55 %) therefore no action was taken, and in case of No. 366 (0.62 % borates) it was thought better to wait and take further samples on some other occasion.

Sample 373 was one of Butter containing 0.6 % of borates; a warning letter was sent to the vendor.

Eight samples of Scotch and one of Irish Whisky were analysed; six of these (including the single specimen of Irish Whisky) consisted largely of patent still spirit, and are therefore classified as "not genuine," as, in my opinion, they are not pure whiskies. In view of the "pending" appeal case no legal proceedings were taken. It seems quite time that local authorities had some definite ruling to go by in these cases.

Only one sample of Bottled Peas was examined, as very few shopkeepers in Blackpool appear to keep these articles now; this sample (No. 360) contained 0.5 grains of copper per pound of peas. As I think the presence of this substance in any quantity, however small, is undesirable and injurious, this sample is classed as "not genuine." No legal proceedings were taken, on account of the comparatively small amount of copper, and also the presence of a label indicating that copper had been used in the preparation of the peas.

Specimen 309 was rather interesting. It was one of

Butterscotch, which was being sold at a stall in packets at a price which did not seem consistent with its being genuine. It was found to be entirely devoid of butter fat. The vendor was warned, and he promised to withdraw certain misleading placards he had exhibited. In view of the absence of any standard for Butterscotch it would have been interesting to see the result had a prosecution been ordered.

Sample 350 is an interesting one, as by its means we were able to bring to book satisfactorily one of the numerous butter swindlers who have been infesting Lancashire towns during the past few years. In this case we had evidence showing that for some weeks the man had been buying 2 or 3 dozen pounds of Margarine per week from a shop in the town at 4d. per pound. He was seen to take the Margarine out of the properly stamped papers and wrap them in plain papers. A sample of the substance he was selling as " Butter " at 1s. a pound was purchased, and found on analysis to be *entirely* Margarine. The man was charged with obtaining money by false pretences instead of under any section of the Food and Drugs Acts, and the Magistrates sentenced him to three months' imprisonment with hard labour.

A suggestive feature of the case was that, on the man being searched by the police, a newspaper cutting was found referring to a case which I mentioned on page 150 of my 1905 Report. In that case a man brought a basket of " country butter " into a shop, but departed hurriedly leaving basket and " butter " behind him on being told that a sample was to be taken for analysis.

The fraud of selling bread and margarine instead of bread and butter in restaurants is, I am afraid, by no means uncommon. Sample 364 was an example of this, and also illustrates the difficulty often experienced in cases taken under the Food and Drugs Acts in getting at the persons really responsible for adulteration. Sample 364 was purchased in August from a waitress in a café situated in the grounds of a local entertainment Company. The Inspector was informed by the waitress and others that the café was carried on by the Company, and to all appearances this information was correct. A summons was issued against the Company and their Manager, but after the lapse of the 28 days from the date of taking the sample, we were informed that the café was sub-let by the Company to a person living in a Lancashire inland town, and an application for tenancy, purporting to be signed by this person was submitted for our inspection. On visiting the town in question we found the person alleged to be the tenant of the café to be an operative in a cotton mill, and very unlikely to be carrying on the café in Blackpool. On being interviewed she stated that she was *not* the tenant, and had not signed the application referred to. After further inquiries, it was decided to withdraw the case against the Company, but to amend the summons so as to refer to the Manager personally. At the hearing it was stated that the application had been signed by the present Manageress of the café in the name of the person abovementioned, with her consent in 1906, but without it in 1907. The actual facts as to the tenancy were not made clear even at the hearing in Court, and the magistrates decided to dismiss the case presumably for want of sufficient evidence as to who was responsible for the sale.

In this instance, prosecution of the waitress—the actual vendor—would probably have been successful, but in accordance with the desire of the Health Committee, we endeavoured to summon the person responsible, instead of a servant only temporarily employed. Having regard to the failure in this case and a similar case reported last year, to get a conviction in face of flagrant fraud, it is evident that the Corporation will require to make themselves secure in future in all cases in which there is any possible doubt as to ownership by proceeding against the actual physical vendor.

Samples 385 and 404 were un-official specimens of Potted Lobster, and are instructive, as they bring to light for the first time, I believe, a new method of defrauding the public. We are much indebted to Mr. Collingwood Williams, the Public Analyst, for the great trouble he has taken in investigating these samples.

Both samples were of so-called " Potted Lobster " from a firm in Blackpool, who appear to be the actual manufacturers. The Analyst's report shows that both samples were *entirely devoid of lobster.* They consisted of some kind of potted fish, mixed with bread, and *coloured with a coal-tar dye ;* they also contained a fair quantity of borate preservative, and were covered as usual with a layer of melted butter. As they were being sold at sixpence a small pot, the vendor probably secured an extremely good profit.

As a result of the examination of the informal samples, a formal sample was taken in January, 1908, from the same vendor. This was found to have been " faked " in precisely the same way. The Health Committee therefore sanctioned the taking of legal proceedings. (Case heard March, 1908; defendants fined 20s. and costs.) Similar manufactures of other firms are now undergoing investigation, and it is to be hoped that this reprehensible method of making undue profits will be stamped out.

MILK.

The results of analysis in the case of Milk samples taken during 1907 are sufficiently extraordinary to justify one in dealing with them in some detail. Out of 69 samples taken, no fewer than 20 were found to fall below the minimal limits fixed by the Board of Agriculture, and yet the conditions were such, that in view of the circular of March, 1905, from the Board of Agriculture, the Corporation did not feel justified in taking legal proceedings in any of the cases.

I append in a tabular form the results of the analyses in the 20 cases in which the milk was deficient in fat. Fourteen of these were official samples taken in the street during delivery, or at a dairy. Of these, 7 were only slightly deficient in fat, the amount being over 2.8 %. In such cases warning letters were sent to the vendors. In one sample from a dairy the amount was 2.7 %, and the vendor pleaded that the sample was taken from near the bottom of the mug. A warning letter was sent. In six instances " appeal to the cow " samples were taken, usually within a very few days after the first sample. In all cases except in No. 317 the " appeal to the cow " samples of mixed milk taken in the morning at the farm revealed a deficiency in fat, the samples being properly taken under the eye of the Inspector. In some instances the " appeal " samples were actually lower in fat content than the original (See Nos. 293 and 323 and 324).

SAMPLES OF MORNING MILK TAKEN IN 1907, CONTAINING LESS THAN 3% OF MILK FAT.

Official No.	Date taken.	Where.	NATURE OF SAMPLE.	Amount of Fat.	Explanation given.
249	7th March	Dairy	Official sample taken in ordinary course	2.70	" Bottom of Mug "
252	8th March	Street	Do. Do. Do.	2.84%	Unequal milking
253	8th March	Street	Do. Do. Do.	2.9%	
258	31st March	Street	Do. Do. Do.	2.9%	
284	17th May	Street	Do. Do. Do.	2.81%	Unequal milking
295	20th May	Farm	Appeal to cow sample in reference to 284	2.90%	
285	17th May	Street	Official sample taken in ordinary cource	2.66%	Unequal milking
293	19th May	Farm	Appeal to cow sample in reference to 285	2.47%	
287	17th May	Street	Official sample taken in ordinary course	2.32%	Unequal milking
289	18th May	Farm	Appeal to cow sample in reference to 287	2.64%	
316	5th July	Street	Official sample taken in ordinary course	2.72%	Unequal milking
323	9th July	Farm	Appeal to cow sample in reference to 316	2.33%	
324	9th July	Farm	Do. Do. Do.	2.53%	
317	5th July	Street	Official sample taken in ordinary course	2.78%	Unequal milking
319	5th July	Street	Do. Do. Do.	2.95%	
320	5th July	Street	Do. Do. Do.	2.9%	
318	5th July	Street	Do. Do. Do.	2.57%	Unequal milking
325	10th July	Farm	Appeal to cow sample in reference to 318	2.67%	
348	26th July	Street	Official sample taken in ordinary course	2.92%	
349	26th July	Street	Do. Do. Do.	2.64%	

Afternoon samples were all found well above the standard as regards fat. The morning milking in this district usually takes place between 4 and 6 a.m., and the afternoon milking between 1 and 2-30 p.m., so that the intervals are about 8 and 16 hours.

In face of these results, of course, no legal proceedings were taken. I reported on the subject to the Health Committee, laying tables of analysis before them, and also referring to similar instances in 1906, 1905, and 1904. I was then instructed to write to the Board of Agriculture on the matter. I did so, enclosing copies of tables showing the comparison between the official samples taken during delivery and appeal samples taken at the farm.

I also stated that the Health Committee were doubtful as to the utility of spending time and money in taking samples of milk under these conditions, and as long as the plea of unequal intervals between milking was allowed to be a sufficient excuse for selling milk poor in fat. In reply the Board acknowledged the difficulties, but did not hold out any hopes that anything would be done to help local authorities in the administration of the Food and Drugs Acts as far as Milk is concerned. On the other hand, they deprecated any slackening on the part of the local authority as regards taking milk samples.

The whole question is undoubtedly in a most unsatisfactory condition at present, and I think that the immunity from responsibility now enjoyed by producers of milk will effectually encourage them to refrain from making any efforts to improve the quality of their milk.

FERTILISERS AND FEEDING STUFFS ACT.

The Council have duly intimated their intention to do all they can to carry out this Act, and have appointed Mr. W. Collingwood Williams, B.Sc., F.I.C., as Official Analyst, and Inspector Sanderson as Official Sampler under the Act. If any inhabitants of the town wish to have samples tested they will receive every assistance and help on application at the Health Office.

ANTHRAX.

Cases of Anthrax occurred during 1907 at two different farms in the neighbourhood. As in both instances the farms sent milk into Blackpool, I considered it my duty to send Mr. Newby to make sure that all the necessary precautions were being taken. In one of the cases I had an opportunity of examining blood from the affected animal microscopically and bacteriologically, and verified the diagnosis of the veterinary surgeon.

HEALTH DEPARTMENT LABORATORY.

In February, 1907, I instituted some experiments as to the actual extent of the action of our Fylde Water on Lead. A new lead pipe 3ft. long and with an internal diameter of $\frac{3}{4}$in., had one end closed by a cork so as form a tube. This leaden tube was then filled with water from a tap in the laboratory, after allowing the water to run for some time. This water when tested immediately was free from lead. On allowing the column of water to stand in the leaden tube from 6 p.m. on Feb. 15th, 1907, to 10 a.m. on Feb. 16th, it was found that the sixteen hours contact with the lead had allowed the water to take up 2 parts per million of lead.

A similar experiment, allowing the water to remain in contact with the lead for 48 hours, showed a solution of 2.2 parts per million, and after contact for 7 days, this quantity was not increased. I had intended to carry out further experiments under varying conditions, and especially by varying the temperature of the water, but other work prevented.

The experiments so far show that the Fylde water has an appreciable action on lead pipes, and that this action might cause water thus contaminated to be distinctly injurious if drunk for some time, but it is obvious that danger could only arise from drinking water which had been standing in the service pipes all night, or water from a leaden cistern, and that if the precaution is taken to run off some water from the tap in the morning before drawing any for culinary purposes, there can be no danger of lead poisoning.

Some experiments made in May were directed to the question of the use of boracic acid as a preservative in cream. By the kindness of a farmer in the district I obtained some cream freshly separated from morning's milk. This was divided into two portions. One (A) was left in a closed bottle at the ordinary temperature of the room—about 60°F. The other (B) was first mixed carefully with 0.25 % of powdered boracic acid, and also left at the room temperature in a stoppered bottle. Two days later sample (A) was distinctly thickened and partly curdled, and had a sour smell and a distinct taste of lactic acid. (B) was still fluid, not thickened, had a slight butyric smell, no acid taste, but a rather pleasant " nutty " flavour.

On the fourth day, (A) had marked sour smell, and was curdled so that bottle could be turned upside down. Taste was acid, but not unpleasant. (B) had then a very slight acid smell, but also a somewhat stale butyric smell. Taste nutty and practically no sourness to be detected by taste. On the 5th day (A) showed marked sourness, and was evidently unfit for food. (B) had somewhat stale smell, and somewhat stale, nutty taste, it was beginning to thicken, but could still flow freely in the vessel. On the 8th day (B) was still capable of flowing. Smell was rather sour and stale.

These experiments show that at ordinary summer temperatures cream can be preserved for a reasonable time by the addition of 0.25 % of borate preservative, which is the amount recommended by the Food Preservatives Committee as the maximum for cream.

In a case of Anthrax in September cultures were made in the laboratory, and microscopic specimens prepared proving the nature of the disease.

COMMON LODGING-HOUSES.

Under the Blackpool Improvement Act, 1901, section 47, the three Common Lodging-houses previously existing were re-registered. I am glad to state that all the houses have been managed satisfactorily. The total number of inspections of Common Lodging-houses made during the year was 944—a large number—due to the fact that I had them visited nearly every day in order to keep them under strict supervision.

I am afraid there are a fair number of houses in the town which are practically, at times, unregistered common lodging-houses, and several of these have been kept under observation, and visits paid after midnight. Prosecutions were instituted against two defendants for two houses in the same street with the result that a fine of 20s. and costs was inflicted in one case, and the other defendant, pleading poverty, was let off with a fine of 2s. 6d. and costs.

OFFENSIVE TRADES.

There are very few offensive trades carried on within the Borough. One rag and bone dealer carries on business in Queenstown, and another is located in a field off Bloomfield Road. At the Public Slaughterhouse accommodation has been found for two persons to carry on tripe-boiling, one has a fat store there, another a hide and skin store, and another carries on the business of gut scraping.

Also during the year, by permission of the Corporation, a firm commenced the business of blood-drying, on the understanding that they would be stopped at once in case any nuisance was created. It was found that if the blood was dried whilst in a fresh condition no nuisance was caused, but if the blood were allowed to stand for some time, until putrefaction had commenced, the drying gave rise to most offensive smells. Strict precautions are now taken to have only fresh blood treated.

Considerable trouble was occasioned by a man who persisted in spite of repeated warnings in carrying on a business as dealer in rags, bones, and fat, and afterwards commenced the drying of rabbit skins. Ultimately we had to take legal proceedings under Sect. 112 of the Public Health Act, and he was fined 10s. and costs for establishing rag and bone business, and 1s. and costs for carrying on the business. He was also fined 10s. and costs for establishing the business of fellmonger, and 1s. and costs for carrying the business on.

SUPERVISION OF FOOD SUPPLIES.

In 1903 I made a change in the administration of the Health Department as regards the supervision of the food supply, establishing a fresh system for the recording of visits, so that we might be able to have more precise information than heretofore. Inspector Newby was charged with the duty of visiting all shops selling foods, and has, under the direction of the Medical Officer of Health, the entire supervision of the food supply, with the exception of the taking of Samples under the Food and Drugs Acts, which is still carried out by the Chief Inspector—Mr. Sanderson. The new arrangement enables me to give a more complete idea of the condition of the Borough in regard to the food supply.

The following Table gives some information as to the numbers of the various shops :—

FOOD PLACES IN BLACKPOOL, 1907.

	1906	1907
Butchers' Shops	108	108
Frozen Meat Shops	27	33
Fish and Chip and Tripe Shops	86	84
Fish Dealers (mostly selling also Fruit and Game)	34	33
Provision Shops (mostly also sell Fruit)	244	295
Provision Shops (selling also Butcher's Meat)	24	25
Fruit Shops	78	76
Restaurants where Food is Cooked	48	48
Tea Rooms	15	21
Oyster Shops (not counting stalls)	9	15
Confectionery and Sweet Shops	191	198
	864	936

It will be observed that the numbers are in excess of those in last year's report by 72.

The above list includes a certain number of the milk sellers of the town, but these are separately considered in another list. During the season there were also about 40 meat stalls in different parts of the Borough, about a dozen oyster barrows, a considerable number of ice cream barrows, and a large number of fish-hawker's barrows.

The following Table gives a summary of the visits paid by Mr. Newby during 1907 in connection with the Food Supply of the Borough :—

SUPERVISION OF FOOD SUPPLIES.

SUMMARY OF VISITS.

		1906	1907
Visits to	Milkshops and Dairies	390	389
,,	Cowsheds in Borough	214	272
,,	Cowsheds out of Borough	14	8
,,	Ice Cream Stalls	226	147
,,	Ice Cream Workshops	345	219
,,	Public Slaughter-house	297	279
,,	Other Slaughter-houses in Borough	772	704
,,	Slaughter-houses out of Borough	72	85
,,	Butchers' Shops	2,369	2,250
,,	Other Shops	2,286	2,350
,,	Restaurant Kitchens	84	90
	Totals	7,069	6,793

These figures show what a large amount of work is done in order to ensure as far as possible that all food sold shall be sound and good. A moment's consideration will show the importance of this in a place like Blackpool, where in the season a visiting population has to be fed far out-numbering the resident population. Owing to the inclement weather ice cream was not quite so much in demand in 1907 as in some years, hence the falling off in visits in this connection.

UNSOUND FOOD.

It is gratifying to find out that of the immense amount of food consumed in Blackpool only a comparatively small amount had to be condemned and seized by the Health Authorities. No doubt vigilant inspection leads to dealers voluntarily destroying any tainted food instead of exposing it for sale. In many cases dealers come to the Health Office to obtain the Inspector's advice in regard to doubtful articles of food, and, in most instances, vendors have willingly given up food considered unsound by the Inspector. In two cases it was thought advisable to seize the food formally, and have it taken before a magistrate and condemned.

In the first case 2 bags of mussels, which were known to have been gathered from polluted beds at St. Annes, were traced to a house in Woolman Road, through information very kindly supplied by Mr. Proctor. The mussels were seized, taken before a magistrate, and formally condemned as unfit for food.

In the other case a carcase of a sheep, the ownership of which was in doubt, was also seized and formally condemned by a magistrate.

Food Seized or Surrendered and Destroyed with Consent of Owner.

(Not including Meat, &c., from Slaughter-houses).

66 Rabbits.
61 lbs. Mutton (damaged by dog bites).
1 Chicken.
17 pairs of Kippers
1 Halibut (62 lbs.)
48 Crabs.
184 lbs. Codfish.
23 lbs. Quaker Oats.
32 Tins of Apricots.
3 tins Peaches.
1 tin Tomatoes
4 tins Salmon.
1 Ham (14 lbs.) (imperfectly cured)
2 Smoked Haddocks do.
2 Pigs' Carcases (worried by other pigs).
1 Pig's Carcase (erysipelas).
} 308 lbs.

The Quaker Oats and Tinned Goods were part of a stock which was being sold by auction. At the commencement of the sale a purchaser brought to the Health Office some Quaker Oats, which were musty, and unfit for food. I therefore sent Mr. Newby to see the Auctioneer, and he readily gave permission for Mr. Newby to go through the whole stock and destroy the goods found not fit for food.

At the Public Slaughter-house the following were surrendered and destroyed as unfit for food :—

Livers affected with flukes of 1 cow, 32 heifers, 16 bullocks, 32 sheep, and 1 calf.
3 sheep found dead : 148½ lbs.
2 lambs found dead : 80 lbs.
1 sheep's carcase, from country, badly dressed and bruised, 46 lbs.
2,272 lbs. pork, inflammation.
1 pig found dead, 218 lbs.
3 heifers' livers (abscesses).
1 pig's head (abscess).
20 lbs. Mutton (damaged).
14 lbs. cow beef, thin flank, slight peritonitis.

The following were the instances in which carcases were discovered affected with tuberculosis. In every case the owners freely consented to deliver up the diseased portions for destruction, and I gladly acknowledge the goodwill which the butchers, both at the Slaughter-house and in the town generally, have shown to the Health Department, and the cheerful way in which they have surrendered any carcase which we considered could not be passed for food.

MEAT SURRENDERED AND DESTROYED ON ACCOUNT OF TUBERCULOSIS, 1907.

Public Slaughter-house :—

Heifer and viscera, 444 lbs.
3 cows and viscera, 1,198 lbs.
9 pigs and viscera, 1,209 lbs.
1 calf and viscera, 94 lbs.
The viscera of 3 cows, 2 heifers, and 1 bullock, and portions of the carcase of 2 heifers and 1 bullock :—Destroyed on account of slight tuberculosis.
Also 1 heifer's carcase and viscera, suffering from peritonitis and dropsy, and also slight tuberculosis.

Private Slaughter-houses outside the Borough :—

1 heifer and viscera, 520 lbs.
Viscera of 2 cows.
Lungs and pleura of young cow.

At Butcher's shops or other premises (*brought in from country already killed*) :

2 pig's carcases and part of another, 380 lbs.
One pig's carcase (226 lbs.), 2 pig's heads (38 lbs.)
One pig's carcase (118 lbs.)

In the case of 1 heifer and 1 pig, it was suspected before slaughter that the animals were affected, and they were killed at the Abattoirs on the understanding that they were to be destroyed if found affected, but passed if fit for food.

All these were destroyed by cremation at the Corporation Destructor.

For years now the relations between the butchers and the Health Department have been of the pleasantest possible description.

The butchers exhibit such confidence in the fairness of the decisions of the Medical Officer of Health and Meat Inspector that in cases of doubt they voluntarily ask the Inspector or myself to come and examine the carcase, and to pass it if we consider it fit for food.

This is so, not only in connection with the Abattoirs, where carcases are under constant supervision, but also in the Private Slaughter-houses in the Borough, and even the owners of private slaughter-houses outside the Borough have requested us to give our opinion in regard to carcases on their premises, and have willingly consented to abide by our decisions on the matter, and to allow such carcases to be removed and destroyed, although their premises were outside our legal jurisdiction. Of course, such visits are beyond the scope of our duties, but both Mr. Newby and myself are very glad to recognise the excellent spirit shown by these butchers, and to meet them in every way possible, even when it involves work beyond our own district.

In August, by request of a Blackpool firm, Mr. Newby went to a farm outside the Borough to see a newly-killed pig. It was badly affected with Tuberculosis, so he refused to allow it to come into the Borough, and I communicated with the Medical Officer of Health of the district in which the farm was situated.

CORPORATION ABATTOIRS.

Slaughter-houses were erected by the Corporation in 1895, consisting of a Public Slaughter-house, and private Slaughter-houses let to various butchers. These were inspected on 279 occasions. Seven of the private slaughter-houses were let to the following :—Mr. J. Cocker, Mr. J. Holt, Messrs. Bridge and Hull, Messrs. Rainford and Valiant, Messrs. Garsden and R. Hull, Mr. W. Sharples, and the Co-operative Society. Other premises were let for tripe boiling, &c., for fat warehouse, for hide and skin warehouse, for gut-scraping, and for blood-drying.

The Public Slaughter-house was regularly used by a considerable number of butchers during the year.

The following is a summary of the total number of animals slaughtered in the Corporation Slaughter-houses during 1907, as compared with the previous year :—

	1906		1907	
Beasts—Cows	102		114	
Heifers	2,037		2,209	
Bullocks	482		740	
Bulls	34		31	
		2,655		3,094
Calves		813		788
Sheep		38,294		37,240
Pigs		1,612		1,431
		43,374		42,553

These figures show a decrease in the number of animals killed from the figures of 1906, due to the fact that fewer sheep were killed during 1907, and also fewer calves and pigs.

SLAUGHTER HOUSES.

There are three private slaughter-houses in the Borough, and 704 inspections have been made of these during 1907, by Mr. Newby, the Food Inspector. They have been found well kept and properly cleansed, and the owners have given every facility to the Inspector.

Bye-Laws as to Tents, Vans, and Sheds.

The strict enforcement of these Bye-laws during the last few years has had an admirable result. We are very rarely troubled now with itinerant van dwellers. Those who do come, settle down in one or other of the locations which have been arranged and comply with our requirements.

Frequent visits are paid to see that proper cleanliness is observed, and we find no difficulty either with the gipsies or with others. Altogether 164 visits of inspection were made under these Bye-laws.

One gipsy was prosecuted under these bye-laws on two informations, one for being without proper water supply and one for being without proper sanitary accommodation. Fines of 5s. and costs in each case were inflicted.

DAIRIES, COWSHEDS, AND MILKSHOPS.

A very considerable number of persons are employed in the milk supply of the town, and owing to the great increase in the demand during the season, constant changes are going on, and great vigilance is required to see that all milk vendors are duly visited and registered.

The following Table shows particulars as to the milk supply of the town, which may be of some interest :—

LIST OF MILK SELLERS IN THE BOROUGH DURING 1907.

Dairies selling by retail	15
Provision Dealers selling by retail	55
Stationers selling by retail	1
Butchers selling by retail	4
Persons meeting farmers' carts on road and getting milk and delivering it direct, not taking it to dairy	16
Tea Rooms and sweet shops selling in glasses as refreshments when asked for	73
Dining rooms selling in glasses as refreshments when asked for	11
Places selling Sterilised Milk in bottles	3
Total	178
No. of Cowsheds in Borough during 1907, the occupiers of which sold Milk during the year	51
Farmers registered as bringing Milk into the Borough from outside districts (Marton, Little Marton, Carleton, Hardhorn, Weeton, Poulton, Staining, Bispham, Thornton, St. Annes, and Elswick)	134
Total	363
To these should be added :—	
Ice Cream Dealers on the register, as Ice Cream dealers under our Local Act are " Purveyors of Milk "	165
Total	528

During 1907, as seen on page 156, Mr. Newby paid in all 272 visits to cowsheds in the Borough, 8 to cowsheds out of the Borough, 389 to milkshops and dairies, 147 to ice-cream stalls, and 219 to ice-cream workshops. During the year 51 milk dealers, and 38 ice-cream dealers have been registered as purveyors of milk, and 81 certificates of registration have been delivered.

In 38 cases persons have been cautioned verbally or by letter for selling milk without being registered; 35 came and registered, the other 3 ceased to sell milk.

Mr. Newby has again made special efforts to persuade vendors to take all precautions to keep the milk and ice-cream sold clean and free from infection. The ice-cream dealers especially have been strictly looked after. In the case of ice-cream stalls the Inspector has insisted on their having two buckets of water for the washing of glasses, &c., so that when one is away, being filled with clean water, they can use the other. On the whole I am satisfied that the conditions under which ice-cream is made and sold are better than ever they have been.

No samples of ice-cream were taken during the year for bacteriological analysis.

Four samples of milk were sent to Professor Delépine for examination for tubercle bacilli. I think it would be desirable to institute a regular investigation into this matter. Instead of taking a few samples haphazard it would be better to test in turn all the sources of supply. The frequency of tuberculosis in children suggests that milk may occasionally be the means of conveying the germ, and if samples were taken systematically the amount of danger from this source could be ascertained.

Very little has been done during 1907 in connection with the improvement of the cow-sheds. Of course, the great majority of the shippons in the Borough have already been altered to comply with the bye-laws. At the two farms mentioned in my last report the shippons still remain unaltered. In both cases the ownership of the premises has recently changed, and in one case the new owner has promised to erect new shippons.

Along with the improvement in the cowsheds, I am of opinion that during the last few years there has been a decided advance in the general standard of cleanliness in regard to dealing with milk. The milk floats coming into Blackpool are kept cleaner, and we have not so often to complain of men coming in the floats with filthy clothes and boots. Letters were sent in 12 instances where shippons were not kept as clean as desirable. These letters were in every case followed by amendment.

There is undoubtedly still room for much improvement and I should like to find some of the farmers undertaking the grooming of cows before milking, and insisting on the milkers washing their hands. It is a disgusting fact that very few samples of milk sent in to Blackpool but would show a deposit consisting of manurial filth and other objectionable dirt if allowed to stand. Even the very simple procedure of merely wiping the udder with a clean, damp cloth, before milking, has been found to reduce very materially the number of germs gaining admission to the milk at the time of milking.

It is quite true that many consumers are very careless as to the cleanliness of the receptacles in which they receive the milk, and also as to the sanitary conditions under which it is stored, but unless the milk is clean when delivered, nothing that the consumer can do will make it keep properly. As I have frequently stated before, all vessels used for holding milk should be cleaned most scrupulously with boiling water. Babies feeding-bottles especially should be carefully cleaned after each time they are used. They should be of simple construction to facilitate disinfection, and with only a nipple and no tube. The old form with the long tube should be religiously avoided.

PUBLIC MORTUARY.

In 1903 a new mortuary was erected under the supervision of the Sanitary Committee. It contains a mortuary room, post-mortem room, and doctor's room, as well as a passage for friends or a jury to view the bodies. Accommodation for seven bodies is provided. As the arrangements for the holding of inquests, and the removal of bodies to the mortuary are usually made by the police, it was ultimately decided that the management and control of the mortuary should be transferred to the Watch Committee. During 1907 the bodies of 7 males and 2 females were taken to the mortuary.

NEW LEGISLATION AFFECTING PUBLIC HEALTH.

During the last few years there has been an increasing tendency in the direction of social legislation. Quite recently we have had the Factory and Workshop Act, 1901, the Midwives Act, the Shop Hours Act, Employment of Children Act, and so on. No doubt all these measures are beneficent in intent and should prove valuable in arresting physical degeneration, and in improving the conditions under which the mass of the people live. But it is also evident that this legislation imposes very serious extra burdens on the Health Departments of local authorities, greatly increases the complexity of the administration of those departments, and adds enormously, both in variety and importance, to the responsibilities cast upon the Medical Officer of Health.

Considering the great importance of the duties now devolving on the Medical Officer of Health, and the long and strenuous period of training needed to prepare him for his work, it is to be regretted that, as is generally admitted, on the whole the holders of this office are quite inadequately paid.

The year 1907 certainly did not fall behind others in regard to legislation affecting Public Health, and it might be desirable to make some brief reference to some of the Acts. The *Butter and Margarine Act*, 1907, will still further add to the already great difficulties of administering the Food and Drugs Acts. It legalises the sale of a third substance, not butter and not margarine, but *milk-blended butter*, which must be sold under a name to be approved by the Board of Agriculture. It is very unfortunate that the Act allows this new substance to contain 24 per cent. of water, whilst neither Butter nor Margarine may contain more than 16 per cent. There are some very valuable provisions in the Act for registration and inspection of butter factories, and for the taking of samples. The onus of proving that a substance found in such a factory is not to be used for adulteration rests on the occupier of the factory. The Local Government Board may also make regulations as to preservatives in butter or butter substitutes, both as to nature and amount.

The *Public Health (Regulations as to Food) Act*, 1907, should be of great value. It was passed probably in consequence of the Chicago meat scare. It enables the Local Government Board to frame regulations allowing measures to be taken to prevent danger to Public Health from the importation, preparation, storage, and distribution of food or drink intended for human consumption.

The most important Act of the year in some respects was the *Public Health Acts Amendment Act*, 1907, which was really a compilation of sanitary sections from various private Acts. Blackpool already possesses most of the powers conferred by this Act, but there are certain sections which would be useful and which I should advise the Council to adopt.

Two Acts amending the Factory and Workshop Acts were passed—the *Factory and Workshop Act*, 1907, referring to laundries, and the *Employment of Women Act*, 1907. Neither possess very much importance for Blackpool, the latter relating to coal mines and flax scutch mills.

The *Vaccination Act*, 1907, is a further concession to the "conscientious objector." Instead of appearing at court, all that is necessary is to make a statutory declaration (exempt from stamp duty), within four months from the birth of the child, and send the declaration by post to the vaccination officer.

Whilst having every sympathy with anyone who really conscientiously believes that vaccination will do harm to his child, I am afraid the new legislation will encourage and lead to great laxity as to vaccination, as many people, who personally have no strong objection to vaccination, will be liable to be persuaded by those who take extreme views on the question to take the very simple steps now necessary to avoid the vaccination of their children.

The *Notification of Births Act*, 1907, should prove of great service in helping our efforts to reduce infantile mortality, as the notification within 36 hours will allow of prompt visitation when required. The Act may be adopted by a Local Authority with the consent of the Local Government Board, The *Education (Administrative Provisions) Act*, 1907, will have far-reaching effects. It imposes on every local education authority the duty to provide for the medical inspection of school children, on admission to school, and on such other occasions as the Board of Education may direct. It also empowers the Education Authority to make arrangements for attending to the health and physical condition of children.

The circulars issued by the Board of Education give further explanations in regard to the administration of the Act, and especially as to the necessity of the correlation of this work with that of the ordinary Public Health administration. Their memorandum states :—" The Board " view the entire subject of school hygiene not as a speciality " or as a group of specialities existing by and of themselves, " but as an integral factor in the health of the nation. The " application of this principle requires that the work of " medical inspection should be carried out in intimate " conjunction with the Public Health Authorities, and " under the direct supervision of the Medical Officer of " Health."

Up to the present the Blackpool Education Committee has not come to any conclusion as to the steps they propose to take to carry out the duties imposed by the Act. It is obvious that in Blackpool it would be quite impossible for the Medical Officer of Health, single-handed to carry out the work in addition to his other duties, and in my opinion the best method would be by the appointment of an Assistant Medical Officer of Health as School Medical Officer to make the medical inspections under the supervision of the Medical Officer of Health, who would organise the work, tabulate the results, and report to the Education Committee thereon.

PROSECUTIONS IN 1907.

MONTH.	DEFENDANT.	ACT.	DETAILS OF OFFENCE.	RESULT.
January	T. Blomley Wild	Food and Drugs Acts	Analyst reported not less than 5% water added to milk	Case dismissed.
January	Joseph Jackson	Do.	Sweet spirit of nitre deficient in ethyl-nitrite	Convicted—Ordered to pay costs
August	David Calvert	Do.	Excess of boracic acid in potted shrimps (0.74%)	Fined 5s. and costs
December	T. W. Walkington	Do.	Bread and margarine sold as bread and butter	Case dismissed
July	George Wilson	Larceny Act	Obtaining money by false pretences; selling margarine as butter	Sentenced to three months' hard labour
May	Robert Butcher	Factory and Workshop Act, 1901	Failure to keep list of outworkers	Ordered to pay costs
May	Do.	Do.	Failure to send in list of outworkers	Do.
July	Miss Flitcroft	Public Health Act, 1875	Failure to comply with notice to abate nuisance	Order to abate within one month
July	Do.	Blackpool Improvement Act, 1893	Failure to pave yards in compliance with notice	Fined 5s. and costs
June	Aaras Robinson	Byelaws as to Tents, Vans, and Sheds	Want of proper water supply	Fined 5s and costs
June	Do.	Do.	Want of proper sanitary conveniences	Fined 5s. and costs

PROSECUTIONS IN 1907—(*continued*).

MONTH.	DEFENDANT.	ACT.	DETAILS OF OFFENCE.	RESULT.
September	James A. Ward	Shop Hours Act, 1892	Failure to exhibit Shop Hours Act Card after previous warning	Fined 1s. and costs.
September	Alfred Jackson	Do.	Do. Do. Do.	Fined 2s. 6d. and costs
September	James A. Ward	Employment of Children Act, 1903	Employing child under 14 years after 9 p.m.	Fined 2s. 6d. and costs
October	Alfred Jackson	Do.	Do. Do. Do.	Fined 2s. 6d. and costs
October	Henry Holden	Do.	Do. Do. Do.	Fined 2s 6d. and costs
September	James W. Hogan	Blackpool Improvement Act, 1893	Keeping a common lodging-house without being registered	Fined 2s 6d. and costs
September	James Flaherty	Do.	Do. Do. Do.	Fined 20s and costs
December	William Smith	Public Health Act, 1875	Establishing trade of rag and bone dealer	Fined 10s and costs
December	William Smith	Do.	Carrying on trade of rag and bone dealer	Fined 1s. and costs
December	William Smith	Do.	Establishing trade of fellmonger	Fined 10s. and costs
December	William Smith	Do.	Carrying on trade of fellmonger	Fined 1s. and costs
September	Clarke & Heap	Do.	Chimney emitting black smoke so as to be a nuisance	Order for abatement
October	Blackpool Tower Co.	Do.	Chimney emitting black smoke so as to be a nuisance (order for abatement previously given)	Fined 20s. and costs

PART IV.

BLACKPOOL METEOROLOGICAL OBSERVATORY.

The new Blackpool Observatory, erected in 1903, is placed on rising ground in an open field close by a bridge crossing the railway behind the New Road Cemetery. The site is about half-a-mile from the old Sanatorium site, and is about 70 feet above mean sea level. The Observatory building is of brick relieved by stone-work, and lighted by windows on the north and south sides. The building is placed four-square to the points of the compass, the doorway looking east. It is twelve feet square, nine feet high, and the floor is about two feet higher than the adjoining ground, requiring three steps at the doorway. The roof is flat and formed of concrete, supported on iron girders, and access to the roof is obtained by a flight of steps in the interior of the building, leading up through a trap door. The roof is protected by a parapet three feet high.

From the centre of the roof projects to a height of 57 feet from the ground a vertical pole of cast-iron tubing, stayed by wire guy-ropes anchored to the ground. This pole carries the " combined " Anemometer and Anemoscope head and wind vane. The wind vane has a copper mouthpiece and aluminium wings, and measures three feet from end to end. From the head, one-inch tubes pass down alongside the anemometer pole, and through holes in the concrete roof to the Dines' recording instrument placed on the floor of the Observatory.

On the roof of the Observatory is placed also a wooden stand bearing the Campbell-Stokes Sunshine-recorder. This is placed some 12 feet above the roof, or 25 feet above the ground level. In the Observatory room is placed the Fortin barometer. The Observatory contains also a telephonic installation, so that messages in regard to the weather may be communicated without delay.

The grass enclosure is about 65 feet to the south-east of the Observatory and 67 feet above mean sea-level and is 24 feet square. It contains in the centre a new 5in. rain-gauge, with M.O. pattern rim. To the east of this is fixed the Negretti & Zambra recording rain-gauge, whilst on the west is fixed one of Halliwell's recording rain-gauges. The Stevenson screen with its instruments occupies the centre of the north side of the enclosure, and on the centre of the south side is fixed the 4-feet earth thermometer. East of this, two solar radiation thermometers are placed four feet above the ground, one a bright bulb *in vacuo* and the other a black bulb *in vacuo*.

Near the south-east corner of the enclosure a minimum recording thermometer with link bulb is supported close to the grass, and gives the lowest temperature during the 24 hours.

When the new rain-gauge was first fixed, the readings were occasionally considerably below those of the old rain-gauge in the Sanatorium grounds, particularly with strong westerly winds. I therefore thought it desirable to build a low earth-mound partly round the enclosure to act as a wind shield, with the result that though the figures recorded often differ, the total amounts over a period of time come out surprisingly close. Thus, during 1907, the old rain-gauge at the Sanatorium registered 34.10 inches of rain, whilst 33.35 inches were registered by the new gauge.

The equipment of the Department consists of :—

In or on the new Observatory building—

(i) A Standard Fortin Barometer.
(ii) A Campbell-Stokes Sunshine Recorder.
(iii) A Wind Vane and a Patent Pressure Tube Anemometer.
(iv) A Baxendell's Recording Anemoscope.
(v) A Recording Barograph.

IN THE GRASS ENCLOSURE —

(vi) A Stevenson Screen, containing wet and dry bulb and maximum and minimum thermometers.
(vii) An Earth Thermometer at a depth of four feet.
(viii) A Rain Gauge, 5in. M.O. pattern rim.
(ix) One Negretti and Zambra's Recording Rain-gauge (not in use).
(x) One solar radiation maximum thermometer, bright bulb *in vacuo*.
(xi) One solar radiation maximum thermometer, black bulb *in vacuo*.
(xii) One terrestrial radiation (or minimum on grass) Thermometer).
(xiii) One Halliwell's Patent Recording Float Pattern Rain-gauge.

RETURNS AND REPORTS.

The Blackpool Observatory is now recognised by the Meteorological Office and Meteorological Society as a Second Order Station. This requires that observations should be taken at 9 a.m. and 9 p.m. daily, and readings recorded of all the chief instruments. A telegram is sent at 6 p.m. each day to the Meteorological Office, which gives the thermometer and barometer reading, the amount of sunshine, direction of wind, and the kind of weather during the day. This information is communicated to the press, and appears in the London daily papers next morning. In addition a post card is despatched every night, giving the 9 p.m. readings, and the records are published on page 4 of the "Daily Weather Report" issued the following morning from the Government Office. The means for the week are now prepared from these postcards by the Meteorological Office, and published in the weekly weather report. A monthly summary is also prepared for the Meteorological Society, but sent direct to the Government Office, whose officials abstract the information required for the "Monthly Weather Report," and afterwards forward the Summary to the Meteorological Society.

As it is impossible for the observer to get down to the Post Office in time after the 9 p.m. reading, I have been able to arrange for the officials at the Conservative Club, in Victoria Street, to receive the message by telephone, and fill up and post the daily post card. I have to acknowledge my indebtedness for this privilege.

During 1907, a great deal was done to supply prompt information as to the Blackpool weather to the papers in different parts of the country. Telegrams recording the state of the weather were sent each forenoon throughout the year to the Exchange Telegraph Company, London, "Lancashire Daily Post," "Bolton Daily Chronicle," "Bolton Evening News," "Huddersfield Examiner," "Liverpool Echo," "Manchester Evening News," and an evening telegram was also sent to the "Liverpool Daily Post and Mercury," "Liverpool Courier," "Manchester Courier," "Birmingham Gazette and News," "London Daily Chronicle," and "Daily Mail," Manchester. During the summer months morning or evening telegrams were sent to 29 daily papers.

There can be no doubt that the increased publicity given to our weather records, and our improved status as a Second Order Station, have been of material advantage to Blackpool.

As in previous years the observations have been taken by Mr. Harry Smith, and I have much pleasure in acknowledging the cheerfulness and faithfulness with which he has carried out this responsible work, which has been more exacting than ever since the commencement of the second order observations, which involve much extra work. Inspector Cookson has been trained to act as deputy-observer when necessary, and has proved a very efficient substitute when Mr. Smith was unable to take the readings. The Chief Clerk, Mr. Berry, and Mr. Edward Smith, have also given important help in the keeping of the records, and the various calculations required for the returns.

The equipment of the observatory was completed in 1905, and there have been no additions to our apparatus during 1907. In December the Fortin barometer was cleaned and re-verified at Kew Observatory. The anemometer was also cleaned in December.

The new Anemoscope recorder has worked very well during the year, and some very interesting charts have been traced. The Halliwell Rain-gauge has also given very satisfactory records. On January 31st, 1907, the minimum on grass thermometer was found broken ; this was replaced immediately by a duplicate instrument, and a new one obtained on March 6th.

The Observatory was officially inspected in July by Mr. William Marriott, Assistant Secretary of the Royal Meteorological Society.

METEOROLOGY, 1907.

YEAR.—With the exception of the brilliant weather in March, and the fine autumnal weather in September, climatic conditions were very ungenial, especially during May, June, and August. Notwithstanding that the mean shade temperature was below normal during two-thirds of the year—particularly from April to August—it is remarkable to find that the mean for the year was only 0.8 degree below the average for 35 years.

BRIGHT SUNSHINE.—The distribution of bright sunshine during the year was most irregular. March, the month of the vernal equinox, had the largest percentage of possible duration of any month during the year, exceeding May by 9.0 %, June by 20.1 %, July by 4.7 %, and August by 15.4 %. There were 1,518.8 hours of bright sunshine recorded, which exceeds the average for the 25 years 1881-1905 by 109.8 hours. It is, however, the smallest amount recorded in Blackpool since 1903, as will be seen from the following table ;—

BRIGHT SUNSHINE IN BLACKPOOL DURING 20 YEARS.

YEAR.	HOURS.	YEAR.	HOURS.	YEAR.	HOURS.	YEAR	HOURS
1888	1,117.0	1893	1,497.3	1898	1,386.2	1903	1,474.2
1889	1,300.1	1894	1,310.2	1899	1,481.7	1904	1,539.1
1890	1,160.8	1895	1,470.3	1900	1,406.1	1905	1,757.9
1891	880.2	1896	1,367.2	1901	1,687.4	1906	1,679.1
1892	1,384.6	1897	1,485.6	1902	1,522.8	1907	1,518.8

There were 294 days (or 80.5 per cent.) during the year on which bright sunshine was recorded, and 71 sunless days. April, July, and September had each only one sunless day, whilst March and June had each two sunless days.

The brightest months were March, with 180.9 hours; April, with 170.0 hours; July, with 227.1 hours; August, with 155.9 hours. The average number of hours was exceeded in every month, except May, June, and August.

The brightest days of the year were March 30th, with 11 hours; May 22nd, with 12.2 hours; June 29th, with 14.8 hours; July 17th, with 14.8 hours; July 18th, with 14.0 hours.

RAINFALL.—Rain to the amount of one-hundredth of an inch or more fell on 217 days, but on many occasions the fall was very slight. The total rainfall registered was 33.35 inches, or 0.42 inch less than the average for the 35 years, 1871-1905.

The months of greatest rainfall were June, with 5.48 inches; October, with 4.11 inches; August and December, each with 3.61 inches; November, with 3.21 inches; May, March, July, with 2.81, 2.60, and 2.56 inches. The months of least rainfall were September, with 0.83 inch; January, with 1.36 inches; February, with 1.50 inches; and April, with 1.67 inches.

GALES.—Gales occurred on 25 days during the year. On 19 days a velocity of 50 miles an hour or more was reached during the maximum gusts. On October 15th, about 1-15 p.m., a gale sprang up with remarkable rapidity, the anemogram showing a rise in velocity from 8 miles to 50 miles in five minutes. This coincided with a rise in the barometer. On comparing the anemogram with the anemoscope chart, it was found that the oscillation and variations were almost identical.

SNOW.—Snow fell on ten days, but the falls were slight. Hail fell on 12 days. Hail fell on the 9th and 12th of June.

FOG.—We were again exceptionally free from fog, except on September 19th and 20th, when there was a dense, white mist. On September 19th the Isle of Man Steamship "Tynwald" left Douglas about 4 p.m., and arrived at Fleetwood about 3-30 p.m. on the 20th. We also had fog on November 25th, and again on December 23rd and 24th.

THUNDERSTORMS.—Slight thunderstorms occurred on 8 days. Those on January 29th and June 9th and 12th were accompanied by hail showers.

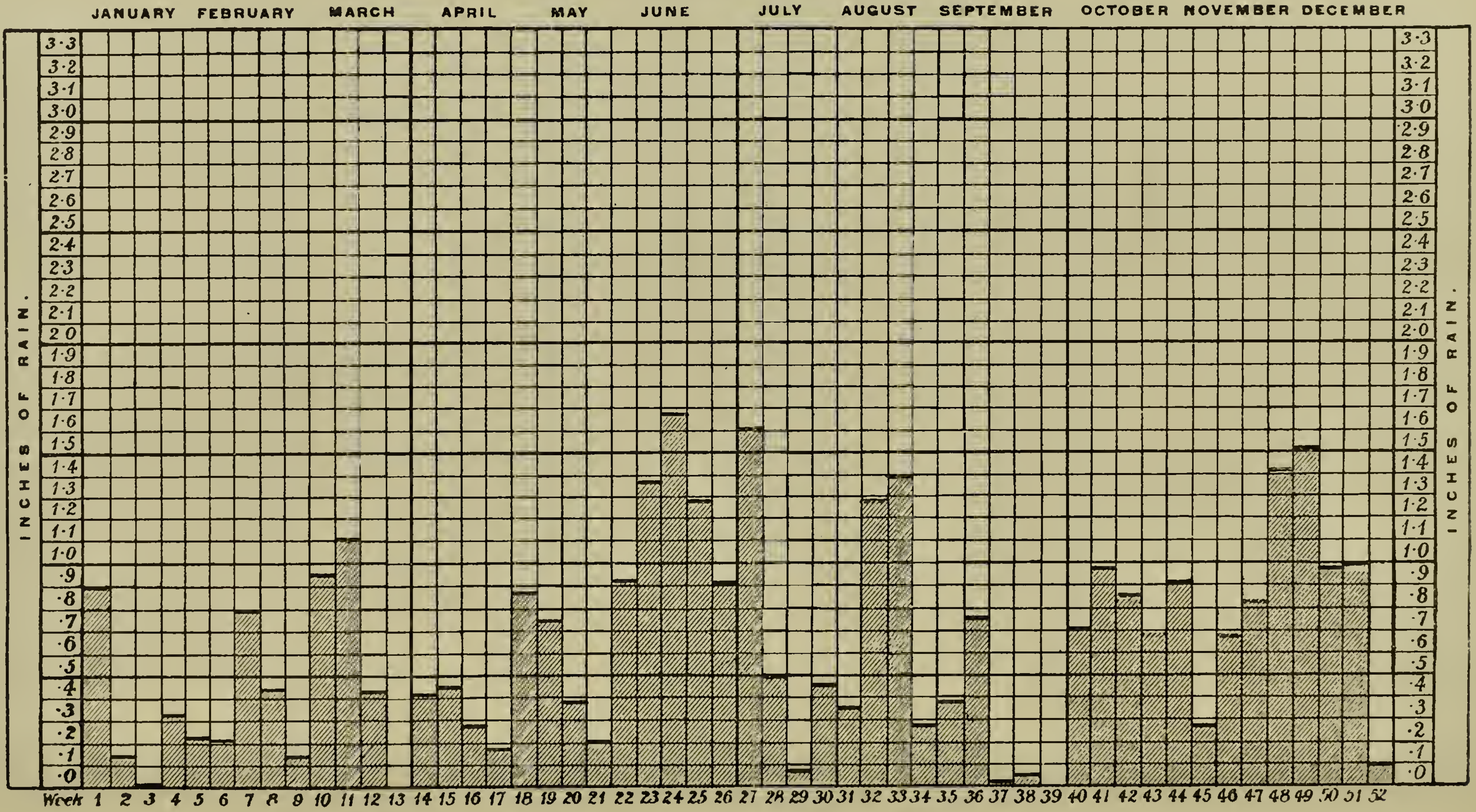
As regards the winter months I would draw attention to the comparison figures for three inland stations in Lancashire on page 180.

Climatic Conditions in Blackpool during the Winter Months of 1907 as compared with three Inland Stations in Lancashire:—

Meteorological Station.	JANUARY.			FEBRUARY.			MARCH.		
	Mean Shade Temp.	Hours of Bright Sunshine.	Rainfall in inches.	Mean Shade Temp.	Hours of Bright Sunshine.	Rainfall in inches.	Mean Shade Temp.	Hours of Bright Sunshine.	Rainfall in inches.
Blackpool	39.4	55	1.36	36.6	98	1.50	42.6	181	2.60
Bolton	38.3	25	2.30	36.4	44	2.48	43.3	101	3.87
Manchester (Prestwich)	38.7	30	2.17	36.9	63	2.11	43.4	145	3.49
Do. (Whitworth Park)	39.5	19	1.37	37.9	55	1.65	44.2	112	2.57
Stonyhurst	38.3	36	3.00	35.9	78	3.52	41.8	168	5.64

Meteorological Station.	OCTOBER.			NOVEMBER.			DECEMBER.		
	Mean Shade Temp.	Hours of Bright Sunshine.	Rainfall in inches.	Mean Shade Temp.	Hours of Bright Sunshine.	Rainfall in inches.	Mean Shade Temp.	Hours of Bright Sunshine.	Rainfall in inches.
Blackpool	49.2	102	4.11	43.5	60	3.21	40.3	29	3.61
Bolton	49.2	35	4.03	43.3	26	3.57	39.4	3.2	4.59
Manchester (Prestwich)	49.3	79	4.15	43.0	33	3.17	39.3	14	3.55
Do. (Whitworth Park)	50.6	69	3.00	44.4	17	2.15	40.9	15	2.63
Stonyhurst	48.4	78	3.86	42.5	51	3.34	39.6	18	5.76

CHART V. (Rainfall in Inches—weekly—1907).



EXTREMES FOR THE YEAR 1907.

BAROMETER.—The highest observed reading of the barometer at Blackpool (reduced to 32°F., and mean sea level), was 31.024 inches on January 23rd, at 9 a.m. The lowest reading was 28.844 inches on February 19th, at 9 p.m. The difference between the highest and lowest is 2.180 inches. The greatest observed monthly range occurred in January, the range being 2.011 inches ; the smallest observed range was in June, 0.728 inch.

TEMPERATURE.—The highest temperature recorded in the Stevenson Screen by the maximum thermometer was 75.5 degrees, on July 16th ; the lowest recorded by the minimum thermometer in the screen was 20.9 degrees on January 25th.

The highest temperature recorded by the black-bulb solar radiation thermometer was 137.4 degrees, on July 16th. The lowest temperature recorded by the minimum on grass thermometer was 9.1 degrees on January 26th.

SUNSHINE.—The largest amount of sunshine recorded on any one day was 14.8 hours, on June 29th, and the same amount on July 17th. We had eleven hours on March 30th, 12.2 hours on May 22nd, 11.9 hours on August 30th, and 11.2 hours on September 10th.

RAINFALL.—The largest amount of rainfall on any one day was 0.83 inch, on August 7th, and 0.73 inch, on December 7th.

The greatest intensity of rainfall shown on the automatic record charts occurred on July 2nd, when 0.47 inch fell in 45 minutes, and 0.73 inch in 3 hours and 25 minutes.

WIND VELOCITY.—The highest wind velocity recorded during the year was 82 miles per hour during the maximum gust, between 11 and 12 p.m., on March 16th.

MAIN FEATURES OF THE MONTHS, 1907.

JANUARY.—Wintry and squally weather was experienced during the first and last few days of the month, but the intervening period was dry and fairly bright. Mean shade temperature was above average from the 1st to the 18th, but from this date it was very cold and frosty. We were 0.7 degree above Manchester, and 1.1 degrees above Stonyhurst. Frost in shade on 9 days, and upon grass on 13 days. Lowest temperature on grass, 9.1 degrees, on the 26th. Total sunshine 54.8 hours, or 16.8 hours above average. Rainfall 1.40 inches below average, and 2.95 inches less than in January, 1906. Rain fell on 15 days. Atmospheric pressure high. Gales occurred on three days. Westerly winds predominated. Hail or snow fell on three days. A thunderstorm, accompanied by severe snow squalls, on the 29th.

FEBRUARY.—A sunny month, fairly dry and cold during the first and fourth weeks, but showery and squally in the second and fourth weeks. Mean shade temperature 2.7 degrees below average, 0.3 degree below Manhcester, but 0.7 degree above Stonyhurst. Frost in shade on 14 days, and upon grass on 21 days. The coldest day was the 23rd, when 12.3 degrees were recorded on grass. Total sunshine 35.4 hours above average. Rain fell on 15 days, and was deficient by 0.71 inch. Atmospheric pressure, although above normal, fluctuated considerably. South-westerly gales on the 16th, 17th, 19th, and 20th. Slight falls of snow or sleet on 6 days. Hail on the 21st. General direction of wind, west. Light mists in the early morning on four days. On February 9th, there was a splendid display of Aurora Borealis.

MARCH.—The early part of the month was bright, but showery; from the 17th to the end of the month we were favoured with exceptionally brilliant weather. It was cooler than usual in the first and second weeks, but the mean shade temperature in the third and fourth weeks was considerably in excess of average. We were below Manchester, but above Stonyhurst. Highest shade temperature, 65.5 degrees on the 31st. Lowest temperature upon grass, 21.9 degrees, on the 12th. Frost in shade on 6 days, and upon grass on 16 days. Bright sunshine 35 hours in excess of March, 1906; and the largest amount recorded in Blackpool at this period of the year. Rain fell on 15 days, and was in excess of average in the early part of month, but deficient in the latter half. Barometer pressure high and steady. There was a deep depression on the 16th, and a severe gale was experienced. The highest wind velocity recorded was 82 miles per hour in the maximum gust between 11 and 12 p.m. Gales occurred on 4 days. Lightning seen on the 16th. Hail fell on the 8th, and snow on the 9th. Westerly winds predominated.

April.—A cool month, but with the exception of intermittent showers on a few days at the beginning and end of month, was bright and fair, especially from the 8th to the 26th. Mean shade temperature was below average, except in the first week, and was practically the same as Manchester, but above Stonyhurst. Highest temperature in shade, 63.8 degrees on the 2nd. Lowest temperature on grass, 18.3 degrees, on the 18th. Frost in shade on two days, and upon grass on 12 days. Bright sunshine was above average, but 55 hours less than in 1906. Rain fell on 12 days, and was slightly less than average; 1.37 inches of the total rainfall fell on 6 days. Atmospheric pressure low. Gales occurred on 2 days. Hail fell on the 7th and 30th. The winds were chiefly from the north-west and east.

May.—A showery, dull and cold month. Mean shade temperature 0.9 degree below average, and slightly above Stonyhurst, but below Manchester. Frost recorded upon grass on 3 days. Highest shade temperature, 71.3 degrees, on the 12th. Lowest temperature upon grass, 27.5 degrees, on the 21st. Although there were many bright intervals, bright sunshine only amounted to 150.8 hours, or 52.2 hours below average, and excepting May, 1906, is the smallest amount recorded in May since 1891. Rain fell on 21 days, and was over three-quarters of an inch above average. Atmospheric pressure unsteady, and below normal. Gales on 4 days. Thunderstorms occurred on the 12th and 24th. Thunder heard on the 9th. Winds were variable, but easterly winds predominated.

June.—Usually one of the brightest months of the year was this year unseasonable, cool, and unsettled. Remarkable for its phenomenal rainfall, and deficiency of bright sunshine. Mean shade temperature 3.2 degrees below average, and is the lowest recorded in June since the commencement of observations in 1885; the nearest approach is 53.8

degrees in June, 1886. The lowest temperature on grass 35.9 degrees, was recorded on the 30th. Bright sunshine 49.3 hours less than average, and 97.2 hours below June, 1906. Although June has 141 more hours of possible duration of bright sunshine than March, we had actually recorded 31.2 hours less than in the month of the Spring equinox. We had only two sunless days, but 82% of the sunshine was recorded on 13 days. In 1891 only 106.25 hours were recorded. Rainfall heavy, exceeding the average by 3.26 inches. Rain fell on 27 days. Barometer pressure low and unsteady. Gales occurred on two days. Prevailing wind south-west. Thunderstorms on the 9th and 12th. Hail fell on the 9th and 12th.

JULY.—The disturbed climatic conditions of June were maintained during the first week of July, but from the 7th to the end of the month the weather, although cool, was more settled, bright, and fairly dry. Mean shade temperature below average, except in the third week. Highest temperature in shade, 75.5 degrees, on the 16th. Lowest temperature on grass, 39.8 degrees, on the 1st and 23rd. Bright sunshine deficient during first week, but in excess for remainder of month. There was only one sunless day. Rainfall deficient, except in first week. Rain fell on 19 days, but the major portion, 1.96 inches, fell on 6 days. Atmospheric pressure normal. General direction of wind west, but in the third week easterly winds prevailed. Thunderstorm on the evening of the 21st.

AUGUST.—Dull and cool during first half of month, but from the 17th the weather was brighter, and the rainfall well below average. Bright sunshine deficient, and 50.9 hours less than in August, 1906. Mean shade temperature 2.4 degrees below average, but above Manchester and Stonyhurst. Highest temperature in shade, 68.8 degrees, on the 4th. Lowest temperature on grass, 33.1 degrees on the 30th. Rainfall 3.61 inches, and in excess in first and second weeks, but deficient in third and fourth weeks. Rain fell on 21 days, but 3.03 inches fell on 9 days. Atmospheric pressure slightly below normal. Westerly winds predominated. Gale on the morning of the 7th.

SEPTEMBER.—A bright, dry, and very pleasant month. Mean shade temperature above average, and almost the same as Manchester, but above Stonyhurst. Frost registered upon grass on one day. Bright sunshine was less than in September, 1906, owing to the hazy atmosphere, and light mists in the early mornings. There was only one sunless day. Rainfall very deficient. Rain fell on 8 days, but heavy dews in the evenings may account for this on 5 days ; 0.76 inch of the rainfall fell on 3 days in the first week. Atmospheric pressure high. Prevailing winds, north-west and east. On the evening of the 19th there was a dense white mist, which continued throughout the following day.

OCTOBER.—Unsettled, but mild and fairly bright. Mean shade temperature a little above average, 0.8 degree above Stonyhurst, but the same as Manchester. Highest temperature in shade, 63.7 degrees, on the 1st. Lowest temperature on grass, 27.4 degrees, on the 24th. Frost in shade on one day, and upon grass on 7 days. Bright sunshine, 9.8 hours above average, and 20 hours in excess of October, 1906. There were 12 days with over 5 hours bright sunshine each. Rainfall a little above average, and fell on 23 days, but the fall on many days was only slight. Barometric pressure low. General direction of wind, south, south-east. Thunder heard on the 2nd. Gale on the 15th.

NOVEMBER.—Mild and calm to the 15th, but the remainder of the month colder, with frequent falls of rain. Mean shade temperature normal, but above Manchester and Stonyhurst. Frost in shade on 8 days, and upon grass on 13 days. Bright sunshine, 13.2 hours above average, and 23 hours more than in November, 1906. Rainfall slightly deficient, and fell on 20 days. Barometric pressure unsteady. Gales on the 12th and 13th. Fog on the 25th. Snow on the 25th. Hail on the 23rd and 24th, Prevailing winds, south, south-east, and north-west.

DECEMBER.—A dull month. Early part wet, but excluding the 19th and 20th, the latter part of the month was fair and dry. Mean shade temperature above average, except in the last week ; 0.7 degree above Stonyhurst, and one degree above Manchester. Frost in shade on 9 days, and upon grass on 13 days. Bright sunshine amounted to 28.7 hours, and is the smallest total recorded since 1903. Rainfall in excess of average, and fell on 21 days. On the 8th between 1 and 2 a.m., 0.42 inch of rain fell. Barometric pressure low. Gales on the 9th and 14th. Thunder and lightning on the 3rd and 4th. Hail showers on the 3rd. From the night of the 23rd until the afternoon of the 24th we had fog, which was, however, not of great density. Winds were chiefly from the south-east.

TEMPERATURE—Stevenson Screen Results.

(IN DEGREES FAHRENHEIT).

1907.	Mean Maximum	Mean Minimum	Mean Temp. *	Mean Daily Range	Absolute extremes.			
					Highest.	Date	Lowest	Date
January	43.0	35.8	39.4	7.2	49.2	2nd	20.9	25th
February	41.4	31.7	36.6	9.7	49.8	28th	21.8	1st
March	49.0	36.1	42.6	12.9	65.5	31st	27.5	12th
April	51.1	38.2	44.7	12.9	63.8	2nd	27.9	18th
May	55.7	43.9	49.8	11.8	71.3	12th	32.8	21st
June	58.6	48.6	53.6	10.0	72.8	9th	41.6	30th
July	63.1	51.5	57.3	11.6	75.5	16th	42.9	23rd
August	61.6	52.3	57.0	9.3	68.8	4th	39.2	30th
September	62.7	49.6	56.2	13.1	72.0	25th	32.8	4th
October	55.0	43.4	49.2	11.6	63.7	1st	28.8	24th
November................	48.8	38.1	43.5	10.7	55.7	4th	23.3	30th
December	44.3	36.2	40.3	8.1	51.5	8th	29.4	28-29
Means	52.9	42.1	47.5	10.7	High'st 75.5	July 16th	Lowest 20.9	Jan. 25th

* Mean of the daily indications (each for the 24 hours ending 9 p.m.) of the maximum and minimum thermometers on the screen.

BAROMETRIC PRESSURE * corrected to 32° F. and mean sea level.

1907.	Mean Pressure.	Difference from Average 1885-1900 (16 years) †	Highest.	Lowest.	Observed Monthly Range.
January	30.302	+.352	31.024	29.013	2.011
February	29.992	+.042	30.602	28.844	1.758
March	30.116	+.170	30.516	29.067	1.449
April	29.783	—.161	30.331	29.147	1.184
May	29.856	—.123	30.308	29.079	1.229
June	29.783	—.253	30.184	29.456	0.728
July	30.024	—.134	30.487	29.516	0.971
August	29.932	—.078	30.348	29.574	0.774
September	30.123	+.123	30.498	29.518	0.980
October	29.612	—.263	30.059	29.051	1.008
November................	29.950	+.116	30.510	29.115	1.395
December	29.695	—.219	30.354	28.886	1.468
Means	29.931	—.035	Highest 31.024	Lowest 28.844	1.246

* From observations at 9 a.m. and 9 p.m. daily.
† 9 a.m. readings only.

UNDERGROUND TEMPERATURES, AND SOLAR AND TERRESTRIAL RADIATION.

1907.	Mean Under-ground at 9 a.m. 4 feet.	Difference from Average 6 years. (1895-1900)	Mean Daily Max. Temp. in Sun.		Mean excess of Black Bulb in vacuo over Bright Bulb in vacuo.	Mean Daily Minimum on short Grass.
			Black Bulb in vacuo.	Bright Bulb in vacuo.		
January	43.3	+0.7	60.6	47.4	13.2	31.0
February	40.5	—0.7	71.6	50.6	21.0	25.4
March	42.0	+0.3	92.4	62.7	29.7	31.9
April	45.0	+0.3	98.8	66.5	32.3	33.9
May	48.4	—0.7	103.3	71.5	31.8	41.1
June	52.4	—2.0	112.9	76.7	36.2	46.4
July	55.8	—1.9	115.8	80.6	35.2	48.8
August	56.8	—2.1	112.4	78.4	34.0	49.7
September	55.8	—2.1	107.0	77.3	29.7	46.3
October	53.4	+0.2	87.2	64.9	22.3	40.5
November..................	49.2	—0.4	69.6	55.0	14.6	34.1
December	44.9	—0.8	56.9	47.0	9.9	33.7
Means	49.0	—0.7	90.7	64.9	25.8	38.6

FORCE AND MOVEMENT OF THE WIND,

AS RECORDED BY THE DINES' RECORDING PRESSURE TUBE ANEMOMETER.

1907.	Mean Daily Move-ment.	Absol. Max. for one hour.	Date.	Rate in Max. Gust.	Date.	Gales occurred on these dates.
	Miles.	Miles.		Miles.		
January	291	39	30th	60	29th	27th, 28th, and 29th
February ...	308	48	20th	72	20th	16th, 17th, 19th, and 20th
March	297	53	16th	82	16th	16th, 17th, 18th, and 19th
April	266	32	30th	53	30th	3rd and 30th
May	246	39	2nd	61	2nd	1st, 2nd, 3rd, and 4th
June	305	40	3rd	59	3rd	2nd and 3rd
July	207	27	30th	38	8th	—
August	357	36	7th	51	7th	7th
September	200	28	2nd	41	2nd	—
October	267	39	15th	52	15th	15th
November...	239	44	13th	63	13th	12th and 13th
December .	317	48	14th	74	14th	9th and 14th
Mean	275	Highest 53	March 16th	Highest 82	March 16th	Total 25

HUMIDITY.

1907.	9 a.m. Readings.			Mean relative humidity.		Difference from Average at 9 a.m. 5 years (1899-1903)
	Dry Bulb.	Wet Bulb.	Dew point.	9 a.m.	9 p.m.	
January	39.0	38.2	37.0	92.8	94.6	+4.6
February	36.0	35.2	34.0	92.6	90.8	+5.0
March	43.2	41.4	39.2	86.0	92.4	+1.4
April	47.2	44.4	41.2	80.4	90.0	+1.3
May	50.9	47.9	44.8	79.6	87.9	+4.0
June	54.6	52.6	50.7	86.9	93.2	+12.4
July	58.7	56.1	54.0	84.9	91.7	+5.7
August	58.3	55.8	53.6	84.9	89.9	+7.4
September	57.8	54.8	52.1	82.3	91.7	+2.4
October	50.4	49.0	47.6	90.5	93.4	+6.8
November	44.2	42.9	41.5	90.8	93.6	+4.4
December	40.7	39.7	38.6	92.2	92.2	+4.5
Means	48.4	46.5	44.5	87.0	91.8	+5.0

RAINFALL.

1907.	Total Rainfall. *	Difference from Average 35 years (1871-1905).	Number of days with 0.01 in. or more.	Greatest fall in one day. †	
				Amount.	Date.
	Inches.	Inches.		Inches.	
January	1.36	—1.40	15	.32	1st
February	1.50	—0.71	15	.25	12th
March	2.60	+0.37	15	.55	9th
April	1.67	—0.13	12	.44	7th
May	2.81	+0.78	21	.58	30th
June	5.48	+3.26	27	.57	11th
July	2.56	—0.45	19	.56	2nd
August	3.61	+0.01	21	.83	7th
September	0.83	—2.58	8	.47	4th
October	4.11	+0.09	23	.63	5th
November	3.21	—0.27	20	.59	26th
December	3.61	+0.61	21	.73	7th
Totals	33.35	—0.42	217	Greatest .83	Aug. 7th

* From 9 a.m. on the 1st, including each month the fall during the first nine hours of the succeeding month.

† 24 hours ending 9 a.m. next day.

DURATION OF BRIGHT SUNSHINE AND AMOUNT OF CLOUD.

1907.	Campbell-Stokes Recorder.					Cloud.	
	Total Bright Sunshine. Hours.	Difference from Average 25 years (1881-1905).	Most Sunshine in One Day.		Number of Sunless Days.		
			Amount. Hours.	Date.		9 a.m.	9 p.m
January	54.8	+16.8	7.8	31st	14	7.3	7.3
February	98.4	+35.4	9.8	27th	8	6.4	6.6
March	180.9	+72.9	11.0	30th	2	4.8	5.2
April	170.0	+16.0	10.8	1st	1	6.6	7.4
May	150.8	—52.2	12.2	22nd	8	7.6	8.6
June	149.7	—49.3	14.8	29th	2	8.1	9.0
July	227.1	+39.1	14.8	17th	1	7.5	7.0
August	155.9	— 7.1	11.9	30th	3	8.4	6.7
September	140.5	+13.5	11.2	10th	1	6.3	5.9
October	101.8	+ 9.8	8.8	4th	5	7.6	7.4
November...........	60.2	+13.2	7.4	15th	11	7.4	6.6
December	28.7	+ 1.7	4.1	6th	15	8.4	8.1
Totals	1,518.8	+109.8	Most 14.8	June 29th July 17th	71	Mean 7.2	Mean 7.2

TEMPERATURE EXTREMES. Solar and Terrestrial Radiation.

1907.	Black Bulb in vacuo.		Black Bulb in vacuo.		Minimum on grass.	
	Highest.	Date.	Highest.	Date.	Lowest	Date.
January	78.7	21st	55.4	16th 21st	9.1	26th
February	92.5	15th	63.3	15th	12.3	23rd
March	110.4	31st	80.5	31st	21.9	12th
April	113.3	17th	77.7	2nd	18.3	18th
May	122.8	16th	83.1	6th 24th	27.5	21st
June	128.8	28th	90.3	9th	35.9	30th
July	137.4	16th	98.2	16th	39.8	1st 23rd
August	129.8	17th	86.1	17th	33.1	30th
September	124.4	6th	86.8	6th	27.8	4th
October	104.7	3rd	75.3	3rd	27.4	24th
November..................	92.4	1st	73.1	13th	17.4	23rd
December	78.8	9th	57.4	9th	21.3	12th
Year	137.4	July 16th	98.2	July 16th	9.1	Jan. 26th

DIRECTION OF WIND AT BLACKPOOL DURING 1907.

OBSERVATIONS 4 TIMES DAILY, AT 9-0 A.M., 1-0 P.M., 6-0 P.M., AND 9-0 P.M.

1907	N.	N.N E.	N.E.	E.N.E.	E.	E.S E	S.E.	S.S.E.	S.	S.S.W.	S.W.	W S.W	W.	W.N.W.	N.W.	N.N.W.	Calm.	No. of Observations.
January ...	2	1	...	9	4	...	8	8	5	4	16	26	16	9	8	8	3	124
February	2	3	3	3	1	5	11	13	5	2	11	7	19	8	5	14	3	112
March	4	...	4	...	3	3	7	9	6	8	17	8	25	17	10	3	6	124
April	1	5	6	11	17	1	4	6	7	1	8	6	13	9	21	4	1	120
May	5	7	4	8	25	4	5	11	3	4	11	7	5	8	11	6	2	124
June	1	1	3	...	2	3	2	12	7	3	33	11	23	12	5	2	4	120
July	2	1	3	3	14	2	12	8	4	1	9	16	19	12	12	6	11	124
August	1	1	...	...	1	1	3	4	3	2	25	27	29	11	13	3	1	124
September	2	3	...	5	16	10	9	13	2	2	9	7	7	11	18	6	2	120
October ...	4	4	14	5	15	7	12	18	9	5	12	6	4	2	4	3	1	124
November	4	9	6	4	11	10	9	16	8	5	5	2	3	6	12	10	6	120
December	...	2	6	8	8	13	8	22	7	7	15	14	6	2	3	3	1	124
Totals ...	28	37	49	56	117	59	90	140	66	44	171	137	169	107	122	68	41	1,460

APPENDIX TABLES.

TABLE I.—VITAL STATISTICS.

Year.	Population estim'td to Middle of each year	BIRTHS.		TOTAL DEATHS.				Deaths in Public Institutions in District.	Deaths of Non-Residents registered in District.	Deaths of Residents registered beyond district.	Nett Deaths at all ages belonging to the District.	
				Under 1 year of age		Gross Deaths. at all ages.						
		Number.	Rate*	Number.	Rate per 1000 Births registered	Number.	Rate*				Number.	Rate*
1	2	3	4	5	6	7	8	9	10	11	12	13
1897	40,234	1,056	26.25	202	191	746	18.54	21	132	23	614	15.26
1898	45,414	1,260	27.74	224	178	772	16.99	29	143	20	629	13.85
1899	48,200	1,318	27.34	243	184	862	17.88	27	150	22	712	14.77
1900	50,166	1,268	25.27	204	161	851	16.96	49	131	26	720	14.35
1901	50,750	1,162	22.90	195	168	847	16.69	47	131	23	716	14.11
1902	52,174	1,250	23.96	154	123	796	15.26	45	117	24	679	13.01
1903	53,015	1,218	22.97	165	135	804	15.17	50	121	30	683	12.88
1904	54,338	1,170	21.53	199	170	802	14.76	33	128	28	674	12.40
1905	55,712	1,131	20.30	153	135	809	14.52	52	129	29	680	12.21
1906	57,115	1,023	17.91	143	140	812	14.22	44	109	33	703	12.31
Averages for years 1897-1906.	50,712	1,186	23.62	188	159	810	16.10	40	129	26	681	13.52
1907	58,431	1,057	18.09	119	113	788	13.49	54	111	36	677	11.59

* Rates in Columns 4, 8, and 13, calculated per 1,000 of estimated population.

NOTE.—Column 7 includes the deaths of all Residents occurring either within or without the District, and of all Visitors dying within the District. Column 11 includes deaths of Blackpool Residents in Kirkham Workhouse and elsewhere without the Borough.

TABLE II.

Vital Statistics in Wards (Residents only).

Names of Localities.	1.—CLAREMONT.				2.—TALBOT.				3.—BANK HEY.				4.—BRUNSWICK.				5.—FOXHALL.				6.—WATERLOO.				Deaths in Public Institutions outside Blackpool, other than Kirkham Workhouse, not allocated to Wards.	7.—KIRKHAM WORKHOUSE.		
Year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.		Births registered	Deaths at all ages	Deaths under one year.
	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1897	6,461	154	71	22	10,125	309	174	57	2,136	25	22	—	6,083	159	93	23	10,104	283	149	49	5,325	116	82	25	—	10	23	—
1898	7,572	169	93	24	10,527	369	163	58	2,136	37	28	7	6,413	161	101	35	12,489	377	157	60	6,277	132	67	22	4	15	16	—
1899	8,104	188	89	15	10,996	343	190	69	2,126	24	26	6	6,744	174	107	40	13,432	379	192	66	6,798	199	88	32	—	11	20	—
1900	8,749	180	87	17	11,317	345	185	47	1,926	24	18	1	6,907	165	112	30	14,052	384	230	73	7,215	170	88	21	—	—	—	—
1901	8,036	177	107	23	12,349	293	202	51	1,910	23	25	5	7,429	164	99	21	14,337	363	197	57	6,689	142	86	24	—	—	—	—
1902	8,658	199	85	22	12,320	320	190	47	1,905	25	28	1	7,765	147	95	12	14,695	387	203	53	6,831	172	78	13	—	—	—	—
1903	8,908	171	107	26	12,445	344	188	53	1,920	22	26	3	7,833	146	84	11	14,859	396	175	50	7,050	139	103	15	—	—	—	—
1904	9,241	179	100	26	12,458	325	177	56	1,927	26	30	6	8,153	135	90	22	15,270	355	194	54	7,289	150	83	24	—	—	—	—
1905	9,454	162	107	28	12,538	322	183	36	1,914	23	13	1	8,421	114	86	17	15,854	372	219	54	7,531	138	72	8	—	—	—	—
1906	9,619	143	108	20	12,667	260	179	39	1,889	18	22	2	8,946	133	107	22	16,300	334	196	40	7,694	135	91	11	—	—	—	—
Averages for years 1897-1906	8,480	172	95	22	11,774	323	183	51	1,979	25	24	3	7,469	150	97	23	14,139	363	191	56	6,870	149	84	20	—	4	6	—
1907	9,886	165	99	17	12,723	257	132	21	1,939	23	23	8	9,391	129	119	18	16,694	337	207	38	7,798	146	97	15	—	—	—	—

TABLE III.

VITAL STATISTICS for Wards.—RESIDENTS ONLY.

WARD.	Population, 1907.	Birth Rate.				Death Rate.				Zymotic Rate.			
		1906	1907	1896 to 1900	1901 to 1905	1906	1907	1896 to 1900	1901 to 1905	1906	1907	1896 to 1900	1901 to 1905
Claremont.........	9,886	14.87	16.69	23.19	20.14	11.23	10.14	11.12	11.46	0.52	0.71	1.55	1.41
Talbot	12,723	20.53	20.20	32.04	25.82	14.13	10.37	17.39	15.14	1.42	0.71	2.87	1.94
Bank Hey	1,939	9.53	11.86	13.69	12.43	11.65	11.86	11.18	12.74	...	...	0.64	0.73
Brunswick	9,391	14.87	13.74	24.50	17.95	11.96	12.67	15.57	11.51	1.68	0.85	2.10	1.05
Foxhall	16,694	20.49	20.19	28.16	25.00	12.02	12.40	14.43	13.17	1.29	0.48	2.39	1.29
Waterloo	7,798	17.55	18.72	23.74	21.01	11.83	12.44	12.84	11.97	0.65	0.77	1.94	0.99

TABLE VII. (Being Table V. of the Local Government Board).

INFANTILE MORTALITY during the year 1907. Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.	1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day	7th Day	Under 1 Week	1-2 Weeks	2-3 Weeks	3-4 Weeks	Total under 1 month	1-2 Months	2-3 Months	3-4 Months	4-5 Months	5-6 Months	6-7 Months	7-8 Months	8-9 Months	9-10 Months	10-11 Months	11-12 Months	Total Deaths under 1 Year.
All Causes Certified	12	1	2	4	1	...	2	22	9	2	7	40	13	6	5	10	3	8	6	10	6	8	3	118
All Causes Uncertified	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
COMMON INFECTIOUS DISEASES—																								
Small-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Whooping Cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	3
DIARRHŒAL DISEASES—																								
Diarrhœa, all forms	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	1	1	1	5
Enteritis, Muco enteritis, gastro-enteritis	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	2
Gastritis, Gastro-intestinal Catarrh	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2
WASTING DISEASES—																								
Premature Birth	6	...	...	2	1	...	...	9	6	...	...	15	2	...	...	2	...	...	...	...	...	...	...	19
Congenital Defects	1	...	...	...	...	...	1	2	2	...	...	4	...	...	...	...	...	...	...	...	...	...	...	4
Injury at Birth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Want of Breast-milk, Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Atrophy, Debility, Marasmus	2	...	1	...	...	...	...	3	...	1	3	7	1	...	1	1	...	...	...	1	...	...	...	11
TUBERCULOUS DISEASES—																								
Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2	1	...	...	5
Tuberculous Peritonitis: Tabes Mesenterica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Other Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2
OTHER CAUSES.																								
Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syphilis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Rickets	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meningitis (*not Tuberculous*)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...	...	4
Convulsions	2	1	...	1	...	...	1	5	...	...	1	6	1	...	...	...	...	1	...	...	...	1	...	9
Bronchitis	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	...	1	1	1	...	...	...	...	7
Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia	...	...	...	...	...	...	...	...	...	...	2	2	...	1	...	5	1	4	1	3	2	3	1	23
Suffocation, overlaying	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Other Causes	1	...	1	1	...	...	...	3	1	...	1	5	3	3	...	1	...	1	2	1	...	1	1	18
	12	1	2	4	1	...	2	22	9	2	7	40	13	7	5	10	3	8	6	10	6	8	3	119

Births in the year—Legitimate, 994; Illegitimate, 63. Deaths from all Causes at all Ages, 763. Population estimated to middle of 1907, 58,431.
Deaths in the year of—Legitimate Infants, 102; Illegitimate Infants, 17.

TABLE VIII.

Length of Residence of Persons who died during the year 1907.

Age Group.	Deaths.	Length of Residence in Blackpool.															Born in B'pool.
		7 days and under.	14 to 7 days	1 month to 14 days.	3 months to 1 month.	6 months to 3 months.	9 months to 6 months.	12 months to 9 months.	2 to 1 year.	3 to 2 years.	4 to 3 years.	5 to 4 years.	15 to 5 years	25 to 15 years	Over 25 years	Indefinite.	
Under twelve months	119	...	...	2	1	...	...	...	...	...	...	...	...	...	...	1	115
1 year and under 5............	52	4	1	1	1	1	...	...	1	2	1	1	...	...	...	...	39
5 and under 15	28	...	1	...	...	...	...	...	1	2	...	1	2	...	...	...	21
15 and under 25	35	4	3	2	...	2	1	...	3	1	1	...	7	3	...	...	8
25 and under 65	342	18	13	19	15	8	6	4	16	19	13	13	105	52	24	...	17
65 and over......................	212	6	3	6	6	4	3	...	6	13	8	5	55	33	59	...	5
Totals	788	32	21	30	23	15	10	4	27	37	23	20	169	88	83	1	205

TABLE X.

Deaths from Various Causes for 8 Years. (RESIDENTS ONLY).

CAUSES.	1900	1901	1902	1903	1904	1905	1906	1907
	50,166	50,750	52,174	53,015	54,338	55,712	57,115	58,431
Measles	2	4	11	5	10	3	7	1
Scarlet Fever	7	15	5	8	5	6	2	4
Whooping Cough	17	10	3	19	2	3	6	5
Diphtheria and Membranous Croup	5	31	17	5	13	11	11	10
Enteric Fever	19	12	12	8	5	6	6	9
Phthisis	33	37	45	39	47	51	39	50
Other forms Tuberculosis	10	21	21	12	17	21	27	22
Epidemic Influenza	25	2	3	9	1	10	14	11
Diarrhœa	49	35	9	23	35	27	32	9
Cancer	47	54	47	52	41	54	54	52
Premature Birth and Congenital Defects	31	22	35	33	34	42	35	21
Senile Decay	18	20	26	35	27	26	34	36
Apoplexy	40	34	35	35	35	42	46	51
Convulsions	10	7	9	6	14	8	9	10
Other diseases of Nervous System	23	21	29	19	24	26	29	34
Valvular and other Diseases of Heart	60	65	58	75	55	67	62	56
Bronchitis	45	45	47	38	39	33	31	55
Pneumonia	79	52	47	50	52	49	51	55
Diseases of Digestive System	49	52	47	54	51	50	45	51
Nephritis and Bright's Disease	20	15	20	22	12	26	29	26
Deaths from Violence	12	20	21	18	32	21	28	17
Debility, &c.	38	40	32	27	38	13	14	13

TABLE XI.

VITAL STATISTICS of Whole District during 1907 and Previous years.
(Being Table I. of the Local Government Board).

Year	Population estim'td to Middle of each year	BIRTHS.		TOTAL DEATHS REGISTERED IN DISTRICT.				Total Deaths in Public Institutions in District.	Deaths of Non-Residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	Nett Deaths at all ages belonging to the District.	
				Under 1 year of age.		At all Ages.						
		Number.	Rate.*	Number.	Rate per 1000 Births registered.	Number.	Rate.*				Number.	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1897	40,234	1,056	26.25	202	191	723	17.9	21	5	23	741	18.42
1898	45,414	1,260	27.74	224	178	752	16.5	29	10	20	762	16.78
1899	48,200	1,318	27.34	243	184	840	17.4	27	9	22	853	17.70
1900	50,166	1,268	25.27	204	161	825	16.44	49	9	26	842	16.78
1901	50,750	1,162	22.90	195	168	824	16.24	47	11	23	836	16.47
1902	52,174	1,250	23.96	154	123	772	14.80	45	16	23	779	14.93
1903	53,015	1,218	22.97	165	135	774	14.60	50	13	27	788	14.86
1904	54,338	1,170	21.53	198	169	774	14.24	33	6	26	794	14.61
1905	55,712	1,131	20.30	152	134	780	14.00	52	16	29	793	14.23
1906	57,115	1,023	17.91	142	139	779	13.64	44	16	27	790	13.83
Averages for years 1897-1906.	50,712	1,186	23.62	188	158	784	15.58	40	11	25	798	15.86
1907	58,431	1,057	18.09	119	113	† 747	12.78	54	17	33	763	13.06

† This figure excludes 5 deaths from drowning of temporary visitors.

* Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the District or Division. The deaths included in Column 12 are the number in Column 7, corrected by the substraction of the number in Column 10 and addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the District on account of sickness or infirmity, and have died in public institutions elsewhere.

TABLE XII.

Vital Statistics of Separate Localities in 1907 and previous years. (Being Table II. of the Local Government Board).

Names of Localities.	1.—CLAREMONT.				2.—TALBOT.				3.—BANK HEY.				4.—BRUNSWICK.				5.—FOXHALL.				6.—WATERLOO.				Deaths in Public Institutions outside Blackpool, other than Kirkham Workhouse, not allocated to Wards.	7.—KIRKHAM WORKHOUSE.		
Year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.	Population estimated to middle of each year.	Births registered	Deaths at all ages	Deaths under one year.		Births registered	Deaths at all ages	Deaths under one year.
	a.	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*
1897	6,461	154	89	27	10,125	309	196	60	2,136	25	29	1	6,083	159	121	25	10,104	283	185	57	5,325	116	98	30	—	10	23	2
1898	7,572	169	128	29	10,527	369	183	64	2,136	37	36	7	6,413	161	120	34	12,489	377	191	64	6,277	132	84	25	4	15	16	1
1899	8,104	188	114	15	10,996	343	213	76	2,126	24	40	6	6,744	174	130	42	13,432	379	226	70	6,798	199	110	34	—	11	20	—
1900	8,749	180	114	19	11,317	345	199	48	1,926	24	24	2	6,907	165	135	34	14,052	384	262	78	7,215	170	108	23	—	—	—	—
1901	8,036	177	135	27	12,349	293	226	54	1,910	23	28	5	7,429	164	120	22	14,337	363	223	62	6,689	142	104	25	—	—	—	—
1902	8,658	199	110	23	12,320	320	204	50	1,905	25	32	1	7,765	147	100	12	14,695	387	237	54	6,831	172	96	14	—	—	—	—
1903	8,908	171	126	26	12,445	344	202	56	1,920	22	34	3	7,833	146	102	13	14,859	396	211	52	7,050	139	113	15	—	—	—	—
1904	9,241	179	134	27	12,458	325	198	59	1,927	26	38	8	8,153	135	108	22	15,270	355	217	56	7,289	150	99	26	—	—	—	—
1905	9,454	162	131	28	12,538	322	196	36	1,914	23	19	1	8,421	114	104	18	15,854	372	248	58	7,531	138	95	11	—	—	—	—
1906	9,619	143	132	20	12,667	260	187	40	1,889	18	28	3	8,946	133	124	25	16,300	334	219	43	7,694	135	100	11	—	—	—	—
Averages for years 1897-1906	8,480	172	121	24	11,774	323	200	54	1,979	25	31	4	7,469	150	116	25	14,139	363	222	59	6,870	149	101	21	—	4	6	—
1907	9,886	165	125	17	12,723	257	144	21	1,939	23	27	8	9,391	129	136	19	16,694	337	224	39	7,798	146	107	15	—	—	—	—

Deaths of Residents occurring in Public Institutions beyond the District are included in Sub-columns *c* of this Table, and those of Non-residents registered in Public Institutions in the District excluded. (See Note on Table XI. as to meaning of terms " Resident " and Non-resident.")

Deaths of Residents occurring in Public Institutions, whether within or without the District, are allotted to the respective localities according to the addresses of the deceased.

TABLE XIII.

Cases of Infectious Disease notified during the Year 1907.

(Table III. of Local Government Board).

NOTIFIABLE DISEASE.	Cases notified in whole district.							Total cases notified in each Locality.							No. of cases removed to Hospital from each locality.						
	At all ages	At ages—Years																			
		Under 1.	1 to 5.	5 to 15.	15 to 25	25 to 65.	65 and upwards.	Claremont.	Talbot—(H).	Bank Hey	Brunswick	Foxhall	Waterloo	Total	Claremont	Talbot—(H).	Bank Hey	Brunswick	Foxhall	Waterloo	Total cases removed to Hospital.
Small-pox	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Cholera	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Diphtheria (including Membranous croup)	84	1	16	56	2	9	......	7	12	......	13	28	24	84	4	11	......	6	14	16	51
Erysipelas	13	......	......	2	......	10	1	......	4	......	5	3	1	13	......	......	......	......	......	......	......
Scarlet Fever	177	1	37	112	19	8	......	32	39	7	22	50	27	177	28	39	6	17	47	25	162
Typhus Fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Enteric Fever	41	......	1	12	9	19	......	8	7	1	3	15	7	41	7	4	......	......	11	5	27
Relapsing Fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Continued Fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Puerperal Fever	2	......	......	......	......	2	......	......	1	......	1	......	......	2	......	......	......	......	......	......	......
Plague	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Measles	309	13	134	152	8	2	......	24	30	8	50	178	19	309	6	2	2	2	12	1	25
Rotheln	1	......	......	1	......	......	......	1	......	......	......	......	......	1	......	......	......	......	......	......	......
Chickenpox	149	13	49	82	5	......	......	27	26	......	22	67	7	149	......	1	......	......	......	......	1
Totals	776	28	237	417	43	50	1	99	119	16	116	341	85	776	45	57	8	25	84	47	266

NOTE.—Mark (H) is the locality in which the Isolation Hospital is situated.

TABLE XIV. (Being Table IV. of Local Government Board). **Causes of, and Ages at, Death during Year 1907.**

Causes of Death.	Deaths at the subjoined ages of "Residents" whether occurring in or beyond the district.							Deaths at all ages of "Residents" belonging to Localities, whether occurring in or beyond the District.							Total Deaths whether of Residents or "Non-Residents" in Public Institutions in the District.
	All ages	Under 1 year	1 and under 5.	5 and under 15	15 and under 25	25 and under 65	65 and upwards	Claremont Ward.	Talbot Ward.	Bank Hey Ward.	Brunswick Ward.	Foxhall Ward.	Waterloo Ward.	Total.	
Small-pox...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	1	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Scarlet Fever	4	...	2	2	...	...	...	2	1	...	...	1	...	4	3
Whooping-cough	7	3	4	...	...	...	...	1	...	...	2	3	1	7	...
Diphtheria (including Membranous Croup)	10	1	4	4	...	1	...	1	2	...	4	...	3	10	5
Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever { Typhus...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever { Enteric	9	...	...	1	3	5	...	2	...	...	3	2	2	9	4
Fever { Other continued	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic influenza	11	...	...	...	...	3	8	...	3	...	1	4	3	11	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa	9	5	3	1	...	...	...	1	6	...	...	2	...	9	...
Enteritis	1	...	...	...	...	1	...	...	...	...	...	...	1	1	...
Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other septic diseases	2	...	...	...	1	1	...	...	...	...	...	2	...	2	1
Phthisis (Pulmonary Tuberculosis)	61	...	1	2	9	47	2	9	18	1	13	15	5	61	...
Other tubercular diseases	22	8	9	3	...	1	1	2	5	...	6	6	3	22	3
Cancer, malignant disease	55	...	...	...	...	37	18	12	6	2	11	15	9	55	3
Bronchitis...	62	7	3	1	...	23	28	15	10	2	12	17	6	62	2
Pneumonia	61	23	8	1	6	16	7	9	17	4	7	21	3	61	1
Pleurisy	2	...	...	...	...	1	1	...	...	...	1	...	1	2	...
Other diseases of respiratory organs	9	...	1	1	...	6	1	...	1	...	2	4	2	9	...
Alcoholism, cirrhosis of liver... ...	12	...	...	...	...	12	...	2	2	...	1	3	4	12	1
Venereal diseases	1	1	...	...	...	...	...	...	...	...	1	...	...	1	...
Premature birth	19	19	...	...	...	...	...	1	2	3	6	5	2	19	...
Diseases and accidents of parturition	4	...	...	...	2	2	...	...	...	...	1	3	...	4	...
Heart diseases...	71	1	...	3	...	33	34	11	13	2	12	23	10	71	...
Accidents	16	3	...	...	1	8	4	...	4	...	3	6	3	16	7
Suicides	2	...	...	...	...	2	...	1	...	...	1	...	...	2	...
All other causes	312	47	14	7	7	129	108	56	54	13	49	91	49	312	24
All causes	763	119	49	26	29	328	212	125	144	27	136	224	107	763	54

TABLE XX.

Table giving the total number of Births and Deaths (Residents and Visitors) with their corresponding rates in each quarter of the year 1907 :—

Quarter ending	Births.	Birth Rate.	Deaths.	Death Rate.	Deaths under one year.	Infant Mortality.	Seven Principal Zymotic Diseases	Zymotic Rate.
March 30th............	287	19.71	205	14.08	29	101.05	10	0.69
June 29th.............	274	18.82	204	14.01	37	135.04	10	0.69
September 28th......	261	17.93	195	13.39	23	88.12	7	0.48
December 28th	235	16.14	184	12.64	30	127.66	14	0 96
Year	1,057	18.09	788	13.49	119	112.58	41	0.70

TABLE A.

ANALYSIS OF MORTALITY.

Residents and Visitors.

YEAR.	BIRTH RATE.	Annual rate of Mortality from						Proportion of Deaths under 1 year to 1,000 births (Infant Mortality).	Percentage of Total Deaths.						
		All Causes (gross D.R.)	All Causes (Corrected for Visitors).	Seven principal Zymotics.	Pulmonary Consumption.	Other Diseases of Respiratory Organs.*	Diseases of Circulatory System.†		Of Infants under 1 year.	Under 5 years.	65 years and over.	From seven principal Zymotics.	From Pulmonary Consumption.	From other Diseases of Respiratory Organs.	From Diseases of Circulatory System.
1886-90	25.18	17.6	15.4	2.11	1.21	3.19	1.40	150.0	21.5	34.3	20.8	12.3	6.9	18.3	8.1
1891-95	23.91	18.6	15.3	2.06	1.14	3.91	1.51	183.3	23.82	33.8	18.9	10.88	6.24	20.74	8.2
1896-1900	26.46	17.52	14.42	2.50	1.12	3.21	1.50	174.9	26.35	35.4	19.2	14.25	6.39	18.23	8.56
1901-1905	22.33	15.28	12.92	1.53	1.04	2.22	1.55	146.37	31.32	29.81	21.02	9.91	6.86	14.50	10.15
1891	22.36	20.0	18.2	2.03	1.2	5.4	1.60	192.6	21.5	34.1	20.1	10.2	6.3	27.0	8.1
1892	24.01	18.2	15.3	0.89	1.2	3.81	1.49	160.4	20.9	29.3	20.9	4.9	6.7	20.9	8.2
1893	22.47	18.7	14.9	2.68	0.98	4.14	1.51	210.3	25.1	33.2	18.6	14.1	5.2	22.1	8.0
1894	23.93	15.8	11.9	1.38	1.08	2.21	1.48	159.8	24.1	33.2	17.3	8.7	6.8	13.9	9.3
1895	26.77	20.06	16.33	3.31	1.24	3.98	1.43	206.0	27.49	39.3	17.4	16.47	6.19	19.76	7.10
1896	25.66	17.19	13.84	1.99	1.15	3.06	1.44	158.5	23.6	32.9	21.3	11.6	6.6	17.7	8.4
1897	26.25	18.57	15.29	2.78	1.07	3.75	1.62	191.3	27.0	37.8	18.0	15.0	5.8	20.1	8.7
1898	27.74	16.99	13.85	2.99	1.14	3.04	1.41	177.7	29.0	37.3	19.4	17.62	6.73	17.87	8.3
1899	27.34	17.88	14.77	2.75	1.36	3.15	1.39	184.4	28.19	36.5	18.1	15.42	7.65	17.63	7.77
1900	25.27	16.96	14.35	2.23	0.88	3.03	1.63	160.88	23.97	32.55	19.15	13.16	5.17	17.86	9.63
1901	22.90	16.69	14.11	2.38	0.97	2.62	1.62	167.81	23.02	32.59	18.42	14.29	5.79	15.70	9.68
1902	23.96	15.26	13.01	1.23	1.07	2.43	1.51	123.2	19.35	27.76	20.23	8.04	7.04	15.95	9.92
1903	22.97	15.17	12.88	1.47	1.00	2.15	1.83	135.47	20.52	28.48	23.26	9.70	6.59	14.18	12.06
1904	21.53	14.76	12.40	1.40	1.05	2.10	1.21	170.09	24.81	33.79	19.33	9.48	7.11	14.21	8.23
1905	20.30	14.52	12.21	1.17	1.13	1.81	1.58	135.28	18.91	26.45	23.98	8.03	7.79	12.48	10.88
1906	17.91	14.22	12.31	1.23	0.91	1.86	1.28	139.78	17.61	25.37	23.65	8.62	6.40	13.05	8.99
1907	18.09	13.49	11.59	0.70	1.04	2.29	1.39	112.58	15.10	21.70	26.90	5.20	7.74	17.01	10.28

* Up to 1900 only deaths from Pneumonia, Bronchitis, and Pleurisy were included.

† Up to 1900 only Valvular and other diseases of Heart were included.

TABLE B.

Births and Deaths (Residents) in Each Quarter of the Year 1907 :—

Quarter Ending.	Births.	Deaths from all causes.	Seven principal Zymotic Diseases.	Pulmonary Consumption.	Other Diseases of Respiratory System	Diseases of Circulatory System.	Total Deaths under 1.	Under 5 years	65 years and over.
March 30th.......	287	196	10	15	31	26	29	34	54
June 29th.........	274	168	8	15	33	8	36	49	41
September 28th.	261	149	6	6	22	13	22	31	46
December 28th...	235	164	14	14	31	16	30	48	47
YEAR	1,057	677	38	50	117	63	117	162	188

TABLE C.

Shewing the several Death Rates (Residents) for each quarter of the year 1907 :—

Quarter ending.	Death Rate.		Birth Rate.	Infant Mortality.	Per cent. of Total deaths of Deaths			
	From all causes.	From 7 Zymotics.			From 7 Zymotics.	Of Infants under 1 year.	Of Children under 5 years.	Of Persons 65 years and over.
March 30th................	13.46	0.69	19.71	101.05	5.10	14.80	17.35	27.55
June 29th	11.54	0.55	18.82	131.39	4.76	21.43	29.17	24.40
September 28th	10.23	0.41	17.93	84.29	4.03	14.77	20.81	30.87
December 28th...........	11.27	0.96	16.14	127.66	8.54	18.29	29.27	28.66

TABLE D (Residents only).

Shewing the proportion of deaths of children under one, of children under five, and of persons over 65 years of age, to total deaths.

YEAR.	NUMBER OF DEATHS.					PERCENTAGE OF TOTAL DEATHS OF DEATHS.		
	Total Deaths.	Under one year of age.	Under 5 years of age.	65 years and over.	From 7 Zymotics.	Under one year of age.	Under 5 years of age.	65 years and over.
1893	421	123	158	76	63	29.22	37.53	18.05
1894	361	96	134	68	31	26.59	37.12	18.84
1895	538	169	232	94	93	31.41	43.12	17.47
1896	507	137	182	117	61	27.02	35.90	23.08
1897	614	178	249	115	95	28.99	40.55	18.73
1898	629	206	260	120	113	32.75	41.34	19.08
1899	712	228	289	124	114	32.02	40.59	17.42
1900	720	189	251	144	99	26.25	34.86	20.00
1901	716	181	251	135	107	25.28	35.06	18.85
1902	679	148	208	132	57	21.80	30.63	19.44
1903	683	158	212	159	71	23.13	31.04	23.28
1904	674	188	251	130	70	27.89	37.24	19.29
1905	680	144	197	158	56	21.18	28.97	23.24
1906	703	134	192	171	64	19.06	27.31	24.32
1907	677	117	162	188	38	17.28	23.93	27.77

TABLE E.

Cases of Infectious Diseases notified during the years 1894-1907 (inclusive).

	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907
Smallpox	20	8	—	—	—	—	—	4	2	22	8	3	9	—
Diphtheria	11	17	6	7	10	13	24	131	74	40	43	48	53	84
Membranous Croup	2	—	—	—	—	—	—	3	1	—	3	1	1	—
Erysipelas	—	—	—	—	—	—	14	13	13	19	26	17	18	13
Scarlet Fever.........	76	154	208	177	77	141	187	271	197	257	179	200	183	177
Typhus Fever	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Enteric Fever	61	79	66	50	67	59	68	58	70	42	28	51	39	41
Puerperal Fever ...	1	1	1	2	5	5	3	2	2	3	5	3	2	2
Measles	320	108	148	794	259	370	302	532	863	127	1,386	871	389	309
Rötheln	8	2	2	—	—	1	2	5	5	5	13	27	6	1

TABLE F.

	Estimated Population.	Rate per 1,000.				Total Births.	Total Deaths.	Total Infant Mortality.
		Births.	Deaths.		Seven Zymotics.			
			Gross.	Corrected for Visitors.				
1879	15,000	36.6	17.8	...	3.06	401	268	122
1880	15,000	34.0	22.7	...	5.0	510	341	206
1881	14,229	30.6	18.6	15.8	1.2	436	265	126
1882	16,000	30.0	22.9	21.0	2.8	480	367	221
1883	16,000	30.0	19.5	16.6	1·6	480	312	140
1884	17,212	29.8	19.0	17.1	2.14	513	328	146
1885	18,031	27.4	17.2	15.2	1.71	494	311	174
1886	19,550	25.9	18.9	16.5	2.71	508	370	152
1887	20,380	25.3	16.0	14.0	2.45	516	327	116
1888	20,540	24.5	15.6	13.2	1.65	504	322	137
1889	21,661	26.5	18.7	16.5	1.9	575	406	169
1890	24,312	23.7	18.5	16.5	1.9	577	451	182
1891	25,310	22.3	20.0	18.2	2.03	566	507	193
1892	26,740	24.0	18.2	15.2	0.90	642	488	160
1893	28,389	22.4	18.7	14.8	2.64	638	532	210
1894	30,337	23.9	15.8	11.9	1.38	726	481	160
1895	32,943	26.7	20.06	16.33	3.31	882	661	206
1896	36,638	25.7	17.19	13.84	1.99	940	630	159
1897	40,234	26.25	18.54	15.26	2.78	1,056	746	191
1898	45,414	27.74	16.99	13.85	2.99	1,260	772	178
1899	48,200	27.34	17.88	14.77	2.75	1,318	862	184
1900	50,166	25.27	16.96	14.35	2.23	1,268	851	161
1901	50,750	22.90	16.69	14.11	2.38	1,162	847	168
1902	52,174	23.96	15.26	13.01	1.23	1,250	796	123
1903	53,015	22.97	15.17	12.88	1.47	1,218	804	135
1904	54,388	21.53	14.76	12.40	1.40	1,170	802	170
1905	55,712	20.30	14.52	12.21	1.17	1,131	809	135
1906	57,115	17.91	14.22	12.31	1.23	1,023	812	140
1907	58,431	18.09	13.49	11.59	0.70	1,057	788	113